WATER POLLUTION CONTROL PROJECTS

OPERATING SUMMARY

1979

Ontario

Ministry of the Environment

The Honourable Keith C. Norton, Q.C., Minister

Gérard J. M. Raymond
Deputy Minister

WATER POLLUTION CONTROL PROJECTS

OPERATED BY:

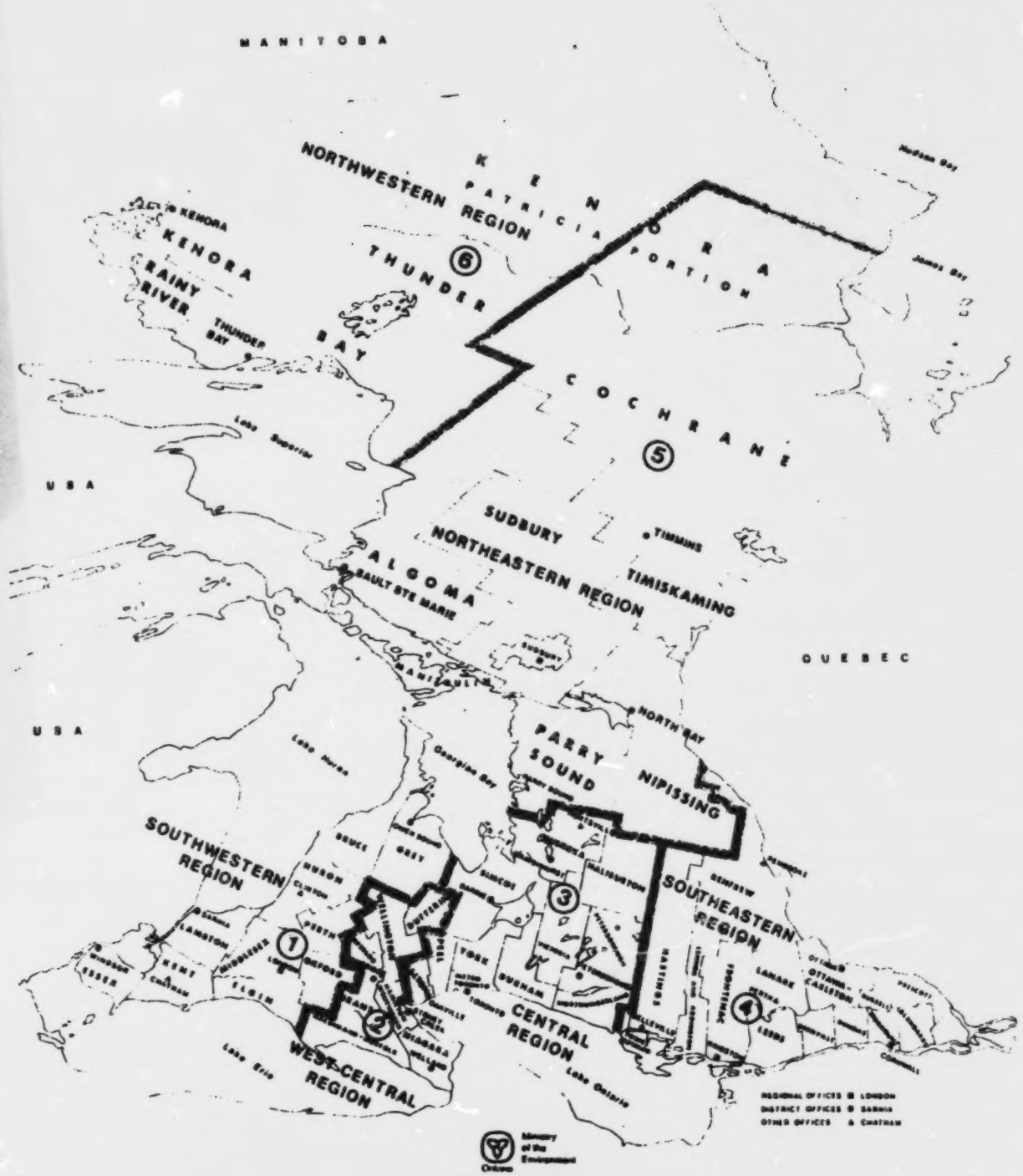
Ministry
of the
Environment

PREPARED BY:

THE MUNICIPAL AND PRIVATE SECTION

POLLUTION CONTROL BRANCH

(416) 965-1655



REGIONS AND OFFICES
IN ONTARIO

FOREWORD

The Ministry of the Environment is concerned with the protection and enhancement of the natural environment. And to meet this objective, one of its goals is to ensure the sound management of wastes across the province. In this regard, the Ministry inspects and regulates all wastewater facilities, and monitors the performance of the treatment plants and their effluent qualities with routine and special sampling programs. The administration of these services and programs is carried out on a regional basis.

Normally, the responsibility for the provision of wastewater services lies with the individual municipalities. However, by special arrangement, more than 200 wastewater facilities in the Province of Ontario are administered and operated by the six Regional Utility Operations sections of the Ministry of the Environment. In order to maintain operational control and long-term evaluation of these provincially-operated facilities, up-to-date statistics are maintained on process parameters and operating costs for each plant, and an annual "Operating Summary" of these statistics is traditionally produced.

In the future, the scope of this statistical data base will be slightly modified and the data collection will be extended to cover the municipally-operated treatment plants. Hence, all major wastewater treatment facilities in the Province of Ontario will be included in the "Operating Summaries".

This is the first year that the operating values are to be shown in metric units. The design data for individual projects are displayed both in imperial and metric measurements.

The majority of the summary tables and all of the individual performance reports are computer produced.

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INTRODUCTION

This Operating Summary has been compiled from data collected during 1979 from 101 mechanical treatment plants and 93 waste stabilization ponds.

During the year a total of 371.2 million cubic metres of wastewater was treated in these facilities, 341.1 million cubic metres in mechanical treatment plants and 30.1 million cubic metres in waste stabilization ponds.

The cost of operating the 101 mechanical treatment plants was 18.1 million dollars and for the 93 waste stabilization ponds, 1.24 million dollars.

INTRODUCTION

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The cost of operating the 101 mechanical treatment plants was 18.1 million dollars and for the 93 waste stabilization ponds, 1.24 million dollars.

PROJECTS INCLUDED IN THIS REPORT

PROJECT	CAPACITY 1000m³	WATERCOURSE	PAGE
PRIMARY			
REGION 1 - Southwest			
1. Owen Sound	13.638	Georgian Bay	62
2. Point Edward	2.591	St. Clair R.	64
REGION 2 - West Central			
3. Nanticoke (Port Dover)	4.091	L. Erie	68
Region 3 - Central			
4. Midland	5.682	Midland Bay	72
Region 4 - Southeast			
5. Cornwall	37.504	St. Lawrence R	76
6. Petawawa	7.273	Ottawa R.	78
7. Prescott	4.546	St. Lawrence R	80
Region 5 - Northeast			
8. Espanola	3.000	Spanish R.	84
9. Parry Sound	3.773	McCurry L.	86
10. Sault Ste. Marie	54.552	St. Mary's R	88
11. Timmins (Mattagami)	34.095	Mattagami R.	90
Region 6 - Northwest			
12. Fort Frances	9.092	Rainy R.	94
CONVENTIONAL ACTIVATED SLUDGE			
Region 1 - Southwest			
13. Chatham	20.457	Thames R.	100
14. Ingersoll	10.229	Thames R.	102
15. St. Mary's	3.636	Thames R.	104
16. Tillsonburg	8.182	Big Otter Cr.	106
17. Tuckersmith (Van Astra)	1.404	Bayfield	108
18. Wallaceburg	6.819	Sydenham R.	110
Region 2 - West Central			
19. Brantford	56.825	Grand R.	114
20. Cambridge (Galt)	38.641	Grand R.	116
21. Cambridge (Preston)	16,865	Grant R.	118
22. Delhi	3.182	Big Cr.	120
23. Dunnville	7.728	Grand R.	122
24. Fergus	5.000	Grand R.	124
25. Haldimand (Caledonia)	2.273	Grand R.	126
26. Haldimand (Hagersville)	.909	Sandusk Cr.	128
27. Kitchener	122.742	Grand R.	130
28. Waterloo	45.460	Grand R.	132
29. Woolwich (Elmira)	3.091	Canagagigue Cr	134
Region 3 - Central			
30. Campbellford	5.909	Trent R.	140
31. Mississauga (Lakeview)	227.300	L. Ontario	142
Region 4 - Southeast			
32. Belleville	36.368	Bay of Quinte	146
33. Kingston Twp.	11.137	L. Ontario	148
34. Sidney (Batawa)	.568	Trent R.	150
35. Trenton	15.911	Bay of Quinte	152
Region 5 - Northeast			
36. North Bay	36.368	L. Nipissing	156
37. Sturgeon Falls	4,546	Sturgeon R.	158
38. Valley East (H., V.C. & V.T.)	11,365	Vermilion R.	160
EXTENDED AERATION/CONTACT STABILIZATION			163
Region 1 - Southwest			
39. Dresden	4.546	Sydenham	166
40. Maidstone (Belle R.)	6.819	Lake St. Clair	168
41. Mildmay	.968	Otter Cr.	170
42. Moore (Corunna)	4.364	St. Clair R.	172
43. Moore (Courtright)	.545	St. Clair R.	174
44. Westminster	1.136	Dingman	176

PROJECTS INCLUDED IN THIS REPORT

PROJECT	CAPACITY 1000m³	WATERCOURSE	PAGE
EXTENDED AERATION/CONTACT STABILIZATION			
Region 2 - West Central			
45. Elora	0.377	Grand R.	180
46. Paris	2.273	Grand R.	182
47. Wellesley	0.500	Nith R.	184
48. Wilmot (Baden)	0.922	Baden Cr.	186
Region 3 - Central			
49. Alliston	3.500	Boyne R.	190
50. Coldwater	0.545	Coldwater R.	192
51. Millbrook	1.136	Baxter Cr.	194
52. Mississauga (Clarkson)	54.552	L. Ontario	196
53. Port McNicoll	1.045	Georgian Bay	198
54. Smith (Woodland Acres)	0.45	Otonabee R.	200
Region 4 - Southeast			
55. Bancroft	1.818	York R.	204
56. Barry's Bay	1.241	Kamaniskeg L.	206
57. Chalk River	0.363	Duck L.	208
58. Deseronto	1.363	Bay of Quinte	210
59. Eganville	0.763	Bonnechere R.	212
60. Ernestown (Odessa)	0.909	Millhave Cr.	214
61. Frankford	1.363	Trent R.	216
62. Hawkesbury	12.274	Ottawa R.	218
63. L'Orignal	0.863	Ottawa R.	220
64. Marmora	0.868	Crowe R.	222
65. Merrickville	0.500	Rideau R.	224
66. Pittsburgh (Cana)	0.095	Cataraqui R.	226
Region 5 - Northeast			
67. Black R. - Matheson (M)	.681	Black R.	230
68. Haileybury	1.591	L. Timiskaming	232
69. Iroquois Falls	4.091	Abitibi R.	234
70. Kirkland Lake	13.638	Murdock Dr.	236
71. Latchford	0.340	Montreal R.	238
72. Moosonee (North)	0.250	Butler Cr.	246
73. Moosonee (Old Townsite)	0.509	Store Cr.	242
74. Rayside Balfour (Azilda)	1.818		244
75. Rayside Balfour (Chelmsford)	3.069	Whitson Cr.	246
76. Smooth Rock Falls	1.636	Mattagami	245
77. Wicksteed (Hornpayne)	1.364	Jackfish R.	250
Region 6 - Northwest			
78. Ear Falls	2.863	English R.	254
79. Geraldton	1.818	L. Kenogamisis	256
80. Ignace	2.500	Agimac Cr.	258
81. Long Lac	2.454	Suicide R.	260
82. Pickle Lake	0.909	Kawinogan's R.	262
83. Red Lake	1.136	Howey Bay	264
84. Schreiber	1.136	L. Superior	266
			269
HIGH RATE ACTIVATED SLUDGE			
Region 1 - Southwest			
85. Meaford	3.909	Georgian Bay	272
Region 2 - West Central			
86. Cambridge (Hespeler)	9.319	Speed R.	276
Region 3 - Central			
87. Bradford	3.636	Schomberg R.	280
Region 4 - Southeast			
88. Carleton Place	5.455	Mississippi R.	284
Region 5 - Northeast			
89. Sudbury	51.142	Junction Cr.	288

PROJECTS INCLUDED IN THIS REPORT

PROJECT	CAPACITY $1000m^3$	WATERCOURSE	PAGE
OXIDATION DITCH			
Region 1 - Southwest			
90. Paisley	0.704	Saugeen R.	294
91. Southampton	3.045	Saugeen R.	296
Region 2 - West Central			
92. Grand Valley	0.600	Grand R.	300
93. Haldimand (Cayuga)	0.909	Grand R.	302
94. Woolwich (St. Jacobs)	0.954	Conestoga R.	304
Region 3 - Central			
95. Fenelon Falls	1.000	Fenelon R.	308
96. Hastings	1.059	Trent R.	310
97. Norwood	0.727	Ouse R.	312
Region 4 - Northeast			
98. Nickel Centre (Coniston)	1.591	Coniston Cr.	316
TERTIARY TREATMENT			
Region 1 - Southwest			
99. Stratford	27.276	Avon R.	322
Region 2 - West Central			
100. Orangeville	6.819	Credit R.	326
101. Simcoe	14.692	Lynn R.	328

PROJECT	WATERCOURSE	PAGE
WASTE STABILIZATION PONDS		
Region 1 - Southwest		
102. Aylmer	Catfish Cr.	334
103. Belmont	Kettle Cr.	335
104 Chesley	North Saugeen R.	336
105 Dover (Mitchell's Bay)	L. St. Clair.	337
106 Dundalk	Foley Drive to Grand R.	338
107. Dutton	Bennet Cr. to Lake Erie	339
108. East Zorra - Tavistock	Tributary to Thames R.	340
109. Enniskillen (Oil City)	Black Cr.	341
110. Essex N. E.	Puce River Dr.	342
111. Essex S. W.	Canard R.	343
112. Forest	Hickory Cr.	344
113. Glencoe	Newbiggen Cr.	345
114. Gosfield N (Cottam)	Maddox Dr. to Belle R.	346
115. Harrow	Cedar Cr.	347
116. Hensall	Black Cr. to Ausable R	348
117. Lucan	Little Ausable R.	349
118. Milverton	Boyle Dr.	350
119. Mitchell	Thames R.	351

PROJECTS INCLUDED IN THIS REPORT

PROJECT	WATERCOURSE	PAGE
WASTE STABILIZATION PONDS		
Region 1 - Southwest Cont'd		
120. Moore (Brigden)	Bear Cr.	352
121. Norwich	Big Otter Cr.	353
122. Oil Springs	Black Cr.	354
123. Port Stanley	Ditch to Kettle Cr.	355
124. Raleigh & Tilbury E. (Merlin)	Foxton Dr. to Jeannettes Cr.	356
125. Ridgetown	Gawne Dr. to McGregor Cr.	357
126. Rodney	Sixteen Mill Cr.	358
127. Sarnia (Bright's Grove)	Cr. to Lake Huron	359
128. Seaforth	Cresswell Cr.	360
129. Sombra (Port Lambton)	St. Clair R.	361
130. Sombra (Port Sombra)	St. Clair R.	362
131. Tilbury N. (Stoney Point)	Little Creek	363
132. Tilbury W. (Comber)	Gov'd Dr. to Big Cr.	364
133. Watford	Bear Cr.	365
134. West Lorne	Zoller Dr.	366
135. Wiarton	Colpoy Bay	367
136. Wingham	Maitland R.	368
137. Zurich	Mun. Dr. to L. Huron	369
Region 2 - West Central		
138. Arthur	Conestoga R.	372
139. Dunnville (Oswego Park)	Oswego Creek	373
140. Harriston	Maitland R.	374
141. Nanticoke (Jarvis)	Sandusk Cr.	375
142. Norfolk (Port Rowan)	Dedrich Cr.	376
143. Shelburne	Boyne R.	377
144. Wilmot (New Hamburg)	Nith R.	378
Region 3 - Central		
145. Beeton	Beeton Cr.	381
146. Havelock	Plato Cr.	382
147. Lakefield	Otonabee R.	383
148. Omemee	Pigeon R.	384
Region 4 - Southeast		
149. Alfred	Ruisseau des Azatika Cr.	387
150. Casselman	S. Nation R.	388
151. Chesterville	S. Nation R.	389
152. Goulbourn (Richmond)	Jock R.	390
153. Lancaster	Finey Cr.	391
154. Leeds & Lansdowne	LaRue Mills Cr	392
155. Madoc	Moira R.	393

PROJECTS INCLUDED IN THIS REPORT

PROJECT	WATERCOURSE	PAGE
WASTE STABILIZATION PONDS Cont'd		
Region 4 - Southeast Cont'd		
156. Plantagenet	S. Nation R.	394
157. Rockland	Ottawa R.	395
158. Russell	Castor R.	396
159. St. Isidore de Prescott	Scotch R.	397
160. Stirling	Rawdon Cr.	398
161. Tweed	Moira R.	399
162. Vankleek Hill	Little Rideau Cr.	400
163. Westport	Upper Rideau L	401
164. Winchester	Castor R.	402
Region 5 - Northeast		
165. Assiginack (Manitowaning)	L. Huron	405
166. Black R - Matheson (Ramore)	Black R.	406
167. Black R. - Matheson (V.G.)	Black R.	407
168. Bruce Mills	L. Huron	408
169. Burk's Falls	Magnetawan R.	409
170. Caldwell (Verner)	Veuve R.	410
171. Englehart	Englehart R.	411
172. Fauquier (Moonbeam)	Groundhog R.	412
173. Haileybury (Cobalt)	Farr Cr.	413
174. Hearst	Mattawishkwia R.	414
175. Little Current	Georgian Bay	415
176. Mattawa	Mattawa R.	416
177. Michipicoten (Wawa)	Magpie R.	417
178. New Liskeard	Wabi R.	418(419)
179. N. Himsworth (Callander)	Callander Bay	420
180. Owens W.I. (Val Rita)	Creek to Kapuskasing R.	421
181. Powassan	Genesee Cr.	422
182. Ratter & Dunnet (Warren)	Veuve R.	423
183. Shackleton & Machin (Fauquier)	Groundhog R.	424
184. Sundridge	Bernard Cr.	425
185. Webbwood	Gough Cr.	426
Region 6 - Northwest		
186. Atwood (Rainy River)	Rainy R.	429
187. Emo	Rainy R.	430
AERATED LAGOONS		
Region 1 - Southwest		
188. Durham	Saugeen R.	434
189. Kincardine	L. Huron	435
190. Listowel	Chapman Drain	436
191. Thornbury	Beaver R.	437
Region 2 - West Central		
192. Nanticoke (Waterford)	Nanticoke Cr.	440
Region 4 - Southeast		
193. Alexandria	Delisle R.	443
194. Almonte	Mississippi R.	444

PLANT LOADING

Hydraulic and organic loading data are summarized in the following table. For the hydraulic assessment, the average day flow for the year is compared to the design capacity and a percentage is calculated.

For the organic assessment, the design loadings for BOD and SS are compared to the actual loadings and a percentage is calculated.

Figures marked with a dot (•) are based upon less than twelve months data.

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 023

PLANT LOADING

PROJECT	HYDRAULIC LOADING DESIGN CAPACITY 1000M3	HYDRAULIC LOADING AVG. FLOW 1000M3	HYDRAULIC LOADING MAX. FLOW 1000M3	HYDRAULIC LOADING AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING DESIGN LOADING KG/DAY BOD	ORGANIC LOADING DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING ACTUAL LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING ACTUAL LOADING % OF DESIGN BOD	ORGANIC LOADING ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/79-DEC/79										
PRIMARY										
SOUTHWESTERN										
OWEN SOUND	13.638	16.156	60.000	118	2454.8	2727.6	1914.6●	2481.9●	77	90
POINT EDWARD	2.591	1.989	3.310	76	440.4	518.2	492.0●	1009.6●	111	194
WEST-CENTRAL										
NANTICOKE (PORT DOVER)	4.091	3.866	17.600	94	859.1	1210.9	1025.7	1084.3	119	89
CENTRAL										
MIDLAND	5.682	8.493	19.984	149	1278.4	1704.6	744.5	1783.5	58	104
SOUTHEASTERN										
CORNWALL	37.504	48.504	103.100	129	4875.5	6000.6	5136.1●	5305.9●	105	88
PETAWAWA	7.273	3.771	12.274	51	-	-	368.2	389.1	-	-
PRESCOTT	4.546	4.280	18.010	94	363.6	727.3	217.5	388.4	59	53
NORTHEASTERN										
ESPANOLA	3.000	2.436	3.945	81	-	-	266.7	358.4	-	-
PARRY SOUND	3.773	5.632	11.911	149	943.2	754.6	349.8	681.1	37	90
SAULT STE MARIE	54.552	54.137	153.200	99	20457.0	16365.6	6778.8	7518.2	33	45
TIMMINS (MATTAGAMI)	34.095	20.088	50.700	58	6137.1	6819.0	1496.5●	3321.0	24	48
NORTHWESTERN										
FORT FRANCES	9.092	9.910	20.000	108	1181.9	1636.5	535.1	1187.9	45	72

PLANT LOADING

PROJECT	HYDRAULIC LOADING <--- DESIGN CAPACITY 1000M3	AVG. FLOW 1000M3	MAX. FLOW 1000M3	AVG. FLOW % OF DESIGN CAPACITY --->	ORGANIC LOADING <--- DESIGN LOADING KG/DAY BOD	SUSP.SOLIDS	ACTUAL LOADING KG/DAY BOD	SUSP.SOLIDS	ACTUAL LOADING % OF DESIGN BOD	SUSP.SOLIDS --->
JAN/79-DEC/79										
CONVENTIONAL SECONDARY										
SOUTHWESTERN										
CHATHAM	20.457	24.089●	83.700	117	5114.2	5114.2	5046.6●	6917.5●	98	135
INGERSOLL (PLANT A)	3.409	1.399	3.273	41	-	-	259.7●	428.2●	-	-
INGERSOLL (PLANT B)	6.819	3.566	9.828	52	-	-	671.2●	1034.4●	-	-
ST MARY'S	3.636	2.984	8.620	82	709.0	727.2	1020.1	2129.0	143	292
TILLSONBURG	8.182	4.700	7.833	57	1922.7	2045.5	481.7	977.9	25	47
TUCKERSMITH (VAN ASTRA)	1.404	.717	5.001	51	-	-	38.4●	43.9●	-	-
WALLACEBURG	6.819	5.497	28.878	80	1363.8	1704.7	836.0	1415.7	61	83
WEST-CENTRAL										
BRANTFORD	56.825	40.965	59.100	72	9660.2	9944.3	6387.0	9790.6	66	98
CAMBRIDGE (GALT)	38.641	29.313	52.300	75	9660.2	9660.2	3583.5	4308.5	37	44
CAMBRIDGE (PRESTON)	16.865	7.890	12.865	46	7926.5	7926.5	3810.8	2980.4	48	37
DELHI	3.182	1.803	3.259	56	5409.4	6045.8	230.0	313.6	4	5
DUNNVILLE	7.728	4.428	9.760	57	1406.4	1545.6	697.0	660.1	49	42
FERGUS	5.000	2.978	8.003	59	1000.0	1000.0	358.5	606.7	35	60
HALDIMAND (CALEDONIA)	2.273	1.896	5.480	83	-	-	203.6	305.8	-	-
HALDIMAND (HAGERSVILLE)	.909	1.355	2.714	149	-	-	96.6	154.4	-	-
KITCHENER	122.742	61.244	140.700	49	33754.0	36822.6	13323.6	16514.9	39	44
WATERLOO	45.460	30.664	60.900	67	13638.0	12274.2	6273.3	6470.1	45	52
WOOLWICH (ELMIRA IND.)	3.091	.447	.793	14	525.4	927.3	160.1	63.1	30	6
WOOLWICH (ELMIRA TOWN)	3.091	2.840	10.876	91	3400.1	989.1	383.2●	411.8●	11	41
WOOLWICH (TOWN & IND)	3.091	3.278	14.047	106	1236.4	927.3	527.2●	500.9●	42	54
CENTRAL										
CAMPBELLFORD	5.909	5.695	10.900	96	1181.8	1181.8	461.2●	638.7●	39	54
SOUTH PEEL (LAKEVIEW)	227.300	170.006	300.490	74	68190.0	79555.0	49372.4	54926.0	72	69
SOUTHEASTERN										
BELLEVILLE	36.368	29.524	83.010	81	4727.8	6364.4	5257.7	11583.2	111	182
KINGSTON TWP	11.137	11.694	27.225	105	2650.6	2227.4	2044.2	1729.3	77	77
SIDNEY TWP (BATAWA)	.568	.697	3.311	122	124.9	142.0	24.5	45.7	19	32
TRENTON	15.911	9.624	25.860	60	3182.2	4773.3	1591.1	1790.3	50	37
NORTHEASTERN										
NORTH BAY	36.368	33.122	67.200	91	5455.2	7273.6	7162.9●	12806.8	131	176
STURGEON FALLS	4.546	7.049	19.366	155	818.2	909.2	387.6	459.3	47	50
VALLEY EAST	11.365	5.272	20.120	46	-	-	426.9	708.3	-	-

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PLANT LOADING

PROJECT	HYDRAULIC LOADING DESIGN CAPACITY 1000M3	HYDRAULIC LOADING AVG. FLOW 1000M3	HYDRAULIC LOADING MAX. FLOW 1000M3	HYDRAULIC LOADING AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING DESIGN LOADING KG/DAY BOD	ORGANIC LOADING DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING ACTUAL LOADING KG/DAY SUSP.SOLIDS	ACTUAL LOADING % OF DESIGN BOD	ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/79-DEC/79										
EXT AERATION/CONT STABLIZATION										
SOUTHWESTERN										
DRESDEN	4.546	1.069	3.219	23	1200.1	991.0	148.9	290.3	12	29
MAIDSTONE BELLE RIVER	6.819	2.282	6.360	33	2045.7	2045.7	133.4	121.9	6	5
MILDMAY	.968	.301	1.209	31	-	-	36.5	50.9	-	-
MOORE (CORUNNA)	4.364	1.446	4.381	33	654.6	654.6	163.0	146.5	24	22
MOORE (COURTRIGHT)	.545	.354	1.883	64	-	-	64.6●	68.9●	-	-
WESTMINSTER TWP	1.136	1.710	3.309	150	227.2	227.2	229.4●	289.8●	101	127
WEST-CENTRAL										
ELORA	.377	.920	2.309	244	79.1	94.2	105.0	132.0	132	140
PARIS	2.273	1.915	4.540	84	454.6	386.4	298.1	314.8	65	81
WELLESLEY	.500	.392	2.855	78	100.0	125.0	32.8	52.0	32	41
WILMOT BADEN	.922	.500	2.060	54	221.2	276.6	109.2	97.2	49	35
CENTRAL										
ALLISTON	3.500	2.721	4.214	77	542.5	700.0	676.3	637.1	124	91
COLDWATER	.545	.552	1.186	101	92.6	109.0	29.3	36.1	31	33
MILLBROOK	1.136	.485	1.144	42	227.2	284.0	42.6	64.4	18	22
PORT MC NICOLL	1.045	1.074	2.982	102	177.6	209.0	61.8	98.0	34	46
SMITH TOWNSHIP	.454	.252	.909	55	-	-	36.4	29.5	-	-
SOUTH PEEL (CLARKSON)	54.552	60.155	153.600	110	10092.1	10910.4	18333.1	17317.6	181	158
SOUTHEASTERN										
BANCROFT	1.818	1.017	2.100	55	363.6	363.6	44.4	60.3	12	16
BARRY'S BAY	1.241	.447	.645	36	273.0	248.2	86.2	92.6	31	37
CHALK RIVER	.363	.397	.777	109	-	-	58.6	66.1	-	-
DESERONTO	1.363	1.031	2.937	75	268.5	305.3	109.7	132.9	40	43
EGANVILLE	.763	.381	.873	49	138.8	117.5	54.2	65.8	39	56
ERNESTOWN (ODESSA)	.909	.801●	2.373	88	-	-	28.5●	42.7●	-	-
FRANKFORD	1.363	.956	8.629	70	231.7	272.6	69.7	99.0	30	36
HAWKESBURY	12.274	8.339	25.307	67	-	-	325.9	611.5●	-	-
L'ORIGNAL	.863	.931	3.102	107	172.6	215.7	51.3●	85.6●	29	39
MARMORA	.868	.469	1.982	54	173.6	173.6	31.7●	46.8●	18	26
MERRICKVILLE	.500	.376	.976	75	125.0	125.0	39.0	44.0	31	35
PITTSBURG (CANA)	.095	.096	.577	101	18.0	20.9	6.1	9.5	34	45
NORTHEASTERN										
BLACK RIVER MATHESON	.681	1.085	3.240	159	-	-	44.9	70.7	-	-
HAILEBURY	1.591	2.657	4.500	167	270.4	318.2	255.7●	425.6●	94	133
IROQUOIS FALLS	4.091	3.358	11.800	82	634.1	654.5	252.9	506.0	39	77
KIRKLAND LAKE	13.638	17.139	38.140	125	-	-	652.0●	1351.1●	-	-

PLANT LOADING

PROJECT	HYDRAULIC LOADING DESIGN CAPACITY 1000M3	HYDRAULIC LOADING AVG. FLOW 1000M3	HYDRAULIC LOADING MAX. FLOW 1000M3	HYDRAULIC LOADING AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING DESIGN LOADING KG/DAY BOD	ORGANIC LOADING DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING ACTUAL LOADING KG/DAY SUSP.SOLIDS	ACTUAL LOADING % OF DESIGN BOD	ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/79-DEC/79										
LATCHFORD	.340	.316	1.085	92	68.0	79.2	20.3	31.0	29	39
MOOSONEE (NORTH)	.250	.122	.218	48						
MOOSONEE DEV'L AREA BD	.509	.660	1.602	129	129.2	145.5	36.3●	-	28	-
RAYSIDE BALFOUR AZILDA	1.818	2.132●	7.460	117	-	-	125.9●	228.5●	-	-
RAYSIDE BALFOUR CHLMSF'D	3.069	3.806●	11.729	133	-	-	415.3●	991.7●	-	-
SMOOTH ROCK FALLS	1.636	1.591	3.946	97	245.4	245.4	92.4	193.7	37	78
WICKSTEED (HORNEPAYNE)	1.363	.735●	-	53	(NO DATA AVAILABLE)		-	-	-	-
NORTHWESTERN										
EAR FALLS	2.863	.865	1.912	30	801.6	887.5	54.8	145.5	6	16
GERALDTON	1.818	.667●	3.973	36	418.1	363.6	39.7●	62.6●	9	17
IGNACE	2.500	.765	3.850	30	500.0	500.0	80.9	113.5	16	22
LONGLAC	2.454	.804●	2.718	32	490.8	490.8	76.5●	103.9●	15	21
PICKLE LAKE	.909	1.060	1.375	116	-	-	37.9	64.9	-	-
RED LAKE	1.136	1.524	4.042	134	231.7	227.2	101.2●	149.4●	43	65
SCHREIBER	1.136	1.158	3.709	101	511.2	272.6	101.9●	-	19	-

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PLANT LOADING

PROJECT	HYDRAULIC LOADING DESIGN CAPACITY 1000M3	HYDRAULIC LOADING AVG. FLOW 1000M3	HYDRAULIC LOADING MAX. FLOW 1000M3	HYDRAULIC LOADING AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING DESIGN LOADING KG/DAY BOD	ORGANIC LOADING DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING ACTUAL LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING ACTUAL LOADING % OF DESIGN BOD	ORGANIC LOADING ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/79-DEC/79										
HIGH RATE										
SOUTHWESTERN										
MEAFORD	3.909	2.735	9.047	69	1563.6	781.8	181.1	247.7	11	31
WEST-CENTRAL										
CAMBRIDGE (HESPELER)	9.319	5.305	9.747	56	2422.9	2003.5	1034.0	1199.8	42	59
CENTRAL										
BRADFORD	3.636	2.600	6.657	71	836.2	999.9	542.7	1132.9	64	113
SOUTHEASTERN										
CARLETON PLACE	5.455	6.893	10.600	126	589.1	687.3	277.4	453.7	47	66
NORTHEASTERN										
SUDBURY	51.142	54.062	141.953	105	4858.4	7108.7	5241.5	6438.7	107	90

PLANT LOADING

PROJECT	HYDRAULIC LOADING DESIGN CAPACITY 1000M3	HYDRAULIC LOADING AVG. FLOW 1000M3	HYDRAULIC LOADING MAX. FLOW 1000M3	HYDRAULIC LOADING AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING DESIGN LOADING KG/DAY BOD	ORGANIC LOADING DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING ACTUAL LOADING KG/DAY SUSP.SOLIDS	ACTUAL LOADING % OF DESIGN BOD	ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/79-DEC/79										
OXIDATION DITCH										
SOUTHWESTERN										
PAISLEY	.704	.361	1.246	51	119.6	140.8	34.3	44.4	28	31
SOUTHAMPTON	3.045	1.331	2.882	43	517.6	609.0	90.3	74.6	17	12
WEST-CENTRAL										
GRAND VALLEY	.600	.309	2.161	51	-	-	40.3	60.3	-	-
HALDIMAND (CAYUGA)	.909	.681	2.891	74	-	-	66.6	100.0	-	-
WOOLWICH (ST.JACOBS)	.954	1.038	5.605	108	190.8	190.8	251.8	283.4	131	148
CENTRAL										
FENELON FALLS	1.000	.984	3.269	98	170.0	200.0	80.8●	129.7●	47	64
HASTINGS	1.059	.373	3.187	35	-	-	152.5●	514.6●	-	-
NORWOOD	.727	.463	.977	63	145.4	181.7	38.4●	57.0●	26	31
NORTHEASTERN										
NICKEL CENTRE (CONISTON)	1.591	1.571	2.864	98	318.2	397.7	134.6●	135.1	42	33

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PLANT LOADING

PROJECT	HYDRAULIC LOADING: DESIGN CAPACITY 1000M3	HYDRAULIC LOADING: AVG. FLOW 1000M3	HYDRAULIC LOADING: MAX. FLOW 1000M3	HYDRAULIC LOADING: AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING: DESIGN LOADING KG/DAY BOD	ORGANIC LOADING: DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING: ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING: ACTUAL LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING: ACTUAL LOADING % OF DESIGN BOD	ORGANIC LOADING: ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/79-DEC/79 (TERTIARY TREATMENT) EFFLUENT FILTRATION										
SOUTHWESTERN										
STRATFORD	27.276	22.204	78.100	81	3818.6	6819.0	2105.1	3395.3	55	49
WEST-CENTRAL										
ORANGEVILLE	6.819	7.878	21.900	115	1363.8	1704.7	663.7	1048.0	48	61
SIMCOE	14.692	9.951	17.009	67	3232.2	3379.1	1800.0	2119.2	55	62

PLANT PERFORMANCE

The arithmetic mean of the monthly values for BOD and SS concentrations for plant influent and effluent are shown together with the number of samples taken. These results include samples sent to the Ministry of the Environment laboratories as well as those analyzed at the plants. Figures marked with a dot (•) are based upon less than twelve months of data.

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PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND: PLANT INFLUENT NO OF SAMPLES	BOD MG/L	PLANT EFFLUENT NO OF SAMPLES	BOD MG/L	REDUCTION %	SUSPENDED SOLIDS: PLANT INFLUENT NO OF SAMPLES	SS CONC MG/L	PLANT EFFLUENT NO OF SAMPLES	SS CONC MG/L	REDUCTION %
JAN/79-DEC/79										
PRIMARY										
SOUTHWESTERN										
OWEN SOUND	22	118●	23	34.3●	71	15	153●	214	26.0●	83
POINT EDWARD	11	247●	11	105.4●	57	11	507●	11	95.1●	81
WEST-CENTRAL										
NANTICOKE (PORT DOVER)	21	265	21	44.9	83	21	280	21	25.3	90
CENTRAL										
MIDLAND	12	87	12	31.5	64	12	210	12	28.5	86
SOUTHEASTERN										
CORNWALL	46	105●	47	112.7●	-7	52	109●	53	75.6●	30
PETAWAWA	20	97	20	31.0	68	60	103	60	49.0	52
PRESCOTT	25	50	25	19.9	60	25	90	25	32.7	63
NORTHEASTERN										
ESPANOLA	27	109	26	57.5	47	32	147	32	47.5	67
PARRY SOUND	23	62	23	28.5	53	73	120	73	46.3	61
SAULT STE MARIE	53	125	53	62.6	49	105	138	105	50.6	63
TIMMINS (MATTAGAMI)	13	74●	12	32.9●	55	44	165	44	46.6	71
NORTHWESTERN										
FORT FRANCES	20	54	20	37.9	29	50	119	50	54.5	54

PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND — PLANT INFLUENT: NO OF SAMPLES	PLANT INFLUENT: AVG BOD MG/L	PLANT EFFLUENT: NO OF SAMPLES	PLANT EFFLUENT: AVG BOD MG/L	REDUCTION: %	NO. OF MONTHS EFFLUENT AVERAGE > 15 MG/L	SUSPENDED SOLIDS — PLANT INFLUENT: NO OF SAMPLES	PLANT INFLUENT: AVG SS CONC MG/L	PLANT EFFLUENT: NO OF SAMPLES	PLANT EFFLUENT: AVG SS CONC MG/L	REDUCTION: %	NO. OF MONTHS EFFLUENT AVERAGE > 15 MG/L
JAN/79-DEC/79												
CONVENTIONAL SECONDARY												
SOUTHWESTERN												
CHATHAM	21	209●	21	14.7●	92	1	84	287●	84	10.5●	96	1
INGERSOLL (PLANT A)	17	185●	16	10.1●	94	2	14	306●	16	8.3●	97	1
INGERSOLL (PLANT B)	20	188	18	17.7	90	5	19	290●	18	14.7●	94	1
ST MARY'S	42	341	42	20.3	94	6	43	713	47	25.4	96	5
TILLSONBURG	12	102	12	2.7	97	0	61	208	61	5.5	97	0
TUCKERSMITH (VAN ASTRA)	18	53●	18	3.2●	93	0	18	61●	18	5.9●	90	0
WALLACEBURG	49	152	46	4.6	96	0	248	257	248	7.1	97	0
WEST-CENTRAL												
BRANTFORD	82	155	91	7.3	95	0	239	239	241	12.9	94	4
CAMBRIDGE (GALT)	114	122	106	8.1	93	0	252	146	298	9.3	93	0
CAMBRIDGE (PRESTON)	48	483	126	31.8	93	6	320	377	283	53.2	85	10
DELHI	19	127	20	7.7	93	1	133	173	128	7.1	95	0
DUNNVILLE	26	157	24	7.5	95	0	133	149	147	11.7	92	2
FERGUS	16	120	15	9.3	92	3	16	203	258	14.2	93	4
HALDIMAND (CALEDONIA)	23	107	22	7.8	92	2	23	161	50	21.5	86	10
HALDIMAND (HAGERSVILLE)	25	71	25	7.2	89	1	25	114	25	15.6	86	3
KITCHENER	134	217	112	12.8	94	3	250	269	251	17.8	93	5
WATERLOO	97	204	95	10.1	95	1	230	211	229	11.4	94	3
WOOLWICH (ELMIRA IND.)	38	358	-	-	-	-	131	141	-	-	-	-
WOOLWICH (ELMIRA TOWN)	39	134	-	-	-	-	133	145●	-	-	-	-
WOOLWICH (TOWN & IND)	39	160●	40	16.6●	89	4	133	152●	145	39.6●	74	12
CENTRAL												
CAMPBELLFORD	9	81●	7	5.2●	93	0	51	112●	49	6.1●	94	0
SOUTH PEEL (LAKEVIEW)	94	290	89	19.9	93	7	94	323	90	28.1	91	9
SOUTHEASTERN												
BELLEVILLE	190	178	193	13.9	92	4	205	392	213	15.5	96	6
KINGSTON TWP	55	174	97	17.1	90	6	63	147	117	15.3	89	6
SIDNEY TWP (BATAWA)	19	35	18	5.0	85	0	69	65	71	8.1	87	0
TRENTON	40	165	39	7.0	95	1	209	186	208	12.2	93	2
NORTHEASTERN												
NORTH BAY	32	216●	32	13.5●	93	4	227	386	212	15.1	96	7
STURGEON FALLS	22	55	22	4.3	92	0	58	65	57	7.4	88	1
VALLEY EAST	21	80	22	10.2	87	2	45	134	52	9.4	92	2

PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND — PLANT INFLUENT: NO OF SAMPLES	PLANT INFLUENT: AVG BOD MG/L	PLANT EFFLUENT: NO OF SAMPLES	PLANT EFFLUENT: AVG BOD MG/L	REDUCTION: %	NO. OF MONTHS EFFLUENT AVERAGE >15 MG/L	SUSPENDED SOLIDS — PLANT INFLUENT: NO OF SAMPLES	PLANT INFLUENT: AVG SS CONC MG/L	PLANT EFFLUENT: NO OF SAMPLES	PLANT EFFLUENT: AVG SS CONC MG/L	REDUCTION: %	NO. OF MONTHS EFFLUENT AVERAGE >15 MG/L
JAN/79-DEC/79												
EXT AERATION/CONT STABLIZATION												
SOUTHWESTERN												
DRESDEN	48	139	48	6.7	95	1	50	271	50	20.2	92	9
MAIDSTONE BELLE RIVER	58	58	46	8.0	86	0	130	53	126	9.8	81	1
MILDMAY	19	121	18	4.1	96	0	26	169	26	6.5	96	1
MOORE (CORUNNA)	12	112	12	3.6	96	0	12	101	12	9.9	90	2
MOORE (COURTRIGHT)	11	182●	11	13.4●	92	3	11	194●	10	13.4●	93	3
WESTMINSTER TWP	17	134●	15	7.2●	94	1	17	169●	15	13.0●	92	2
WEST-CENTRAL												
ELORA	15	114	14	14.4	87	3	15	143	189	39.5	72	12
PARIS	36	155	34	33.3	78	12	36	164	35	40.0	75	12
WELLESLEY	24	83	24	4.1	95	0	45	132	43	12.7	90	5
WILMOT BADEN	34	218	26	3.2	98	0	34	194	25	7.5	96	0
CENTRAL												
ALLISTON	24	248	23	7.1	97	0	95	234	95	17.5	92	5
COLDWATER	12	53	12	4.2	92	0	12	65	12	8.1	87	1
MILLBROOK	14	87	14	2.8	96	0	12	132	12	16.3	87	4
PORT MC NICOLL	12	57	12	5.1	91	0	12	91	12	11.8	86	3
SMITH TOWNSHIP	12	144	12	2.8	98	0	12	117	12	5.8	95	0
SOUTH PEEL (CLARKSON)	116	304	116	4.9	98	0	116	287	116	8.2	97	0
SOUTHEASTERN												
BANCROFT	24	43	24	7.2	83	2	76	59	71	9.6	83	2
BARRY'S BAY	23	193	22	18.0	90	3	97	207	97	13.1	93	4
CHALK RIVER	21	147	21	38.4	73	11	57	166	53	38.1	77	11
DESERONTO	32	106	32	10.4	90	1	32	128	32	10.2	92	1
EGANVILLE	24	142	24	4.5	96	0	24	172	24	7.7	95	0
ERNESTOWN (ODESSA)	22	35●	21	3.1●	91	0	22	53●	21	14.8●	72	5
FRANKFORD	18	72	16	6.3	91	3	88	103	88	11.4	88	3
HAWKESBURY	15	39	13	13.5	65	5	15	73●	13	32.0●	54	11
L'ORIGNAL	21	55●	17	6.8●	87	2	21	91●	16	9.7●	89	2
MARMORA	18	67●	17	5.4●	92	1	24	99●	17	15.5●	84	4
MERRICKVILLE	39	103	39	11.0	89	3	39	117	39	21.9	81	8
PITTSBURG (CANA)	19	64	19	8.9	86	2	43	99	43	20.7	79	10
NORTHEASTERN												
BLACK RIVER MATHESON	24	41	24	4.4	89		24	65	22	11.5	82	2
HAILEYBURY	22	96●	22	16.7●	82	4	22	160●	22	16.6●	89	4
IROQUOIS FALLS	19	75	18	12.7	83	3	53	150	55	10.2	93	0
KIRKLAND LAKE	19	38●	19	10.0●	73	2	35	78●	30	18.7●	76	8

PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND: PLANT INFLUENT NO OF SAMPLES	PLANT INFLUENT AVG BOD MG/L	PLANT EFFLUENT NO OF SAMPLES	PLANT EFFLUENT AVG BOD MG/L	REDUCTION %	NO. OF MONTHS EFFLUENT AVERAGE > 15 MG/L	SUSPENDED SOLIDS: PLANT INFLUENT NO OF SAMPLES	PLANT INFLUENT AVG SS CONC MG/L	PLANT EFFLUENT NO OF SAMPLES	PLANT EFFLUENT AVG SS CONC MG/L	REDUCTION %	NO. OF MONTHS EFFLUENT AVERAGE > 15 MG/L
JAN/79-DEC/79												
LATCHFORD	22	64	21	6.2	90	1	22	98	22	24.2	75	9
MOOSONEE DEV'L AREA BD	1	55●	1	4.1●	92	0	1	4●	1	5.0●	21	0
RAYSIDE BALFOUR AZILDA	21	59●	21	3.0●	94	0	67	107●	65	6.3●	94	0
RAYSIDE BALFOUR CHLMSF'D	24	109●	24	7.5●	93	0	85	260●	102	10.3●	96	2
SMOOTH ROCK FALLS	24	58	23	2.3	96	0	24	121	52	2.0	98	0
NORTHWESTERN												
EAR FALLS	43	63	43	5.1	91	0	43	168	43	27.6	83	9
GERALDTON	22	59	22	2.9	95	0	22	93●	22	8.1●	91	0
IGNACE	36	105	43	8.7	91	2	36	148	43	22.3	84	6
LONGLAC	12	95	12	23.0	75	6	12	129●	12	29.5●	77	7
PICKLE LAKE	43	35	42	4.3	87	0	43	61	42	10.5	82	0
RED LAKE	17	66	14	19.3	70	6	17	98●	14	27.9●	71	8
SCHREIBER	11	88	10	23.3	73	6	10	23	5	37.5●	60	6

PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND						SUSPENDED SOLIDS					
	PLANT INFLUENT		PLANT EFFLUENT		REDUCTION		PLANT INFLUENT		PLANT EFFLUENT		REDUCTION	
	NO OF SAMPLES	AVG BOD MG/L	NO OF SAMPLES	AVG BOD MG/L	%	NO OF MONTHS EFFLUENT AVERAGE > 15 MG/L	NO OF SAMPLES	AVG SS CONC MG/L	NO OF SAMPLES	AVG SS CONC MG/L	%	NO OF MONTHS EFFLUENT AVERAGE > 15 MG/L
JAN/79-DEC/79												
HIGH RATE												
SOUTHWESTERN												
MEAFORD	24	66●	23	8.4●	87	1	25	90	24	8.2	90	2
WEST-CENTRAL												
CAMBRIDGE (HESPELER)	47	194	79	34.5	82	12	49	226	82	45.9	79	12
CENTRAL												
BRADFORD	13	208	12	17.6	91	8	241	435	221	29.5	93	9
SOUTHEASTERN												
CARLETON PLACE	23	40	22	16.4	59	6	23	65	22	26.4	59	7
NORTHEASTERN												
SUDBURY	18	96	19	11.9	87	2	48	119	117	12.8	89	2

PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND: PLANT INFLUENT NO OF SAMPLES	PLANT INFLUENT AVG BOD MG/L	PLANT EFFLUENT NO OF SAMPLES	PLANT EFFLUENT AVG BOD MG/L	REDUCTION %	NO OF MONTHS EFFLUENT AVERAGE > 15 MG/L	SUSPENDED SOLIDS: PLANT INFLUENT NO OF SAMPLES	PLANT INFLUENT AVG SS CONC MG/L	PLANT EFFLUENT NO OF SAMPLES	PLANT EFFLUENT AVG SS CONC MG/L	REDUCTION %	NO OF MONTHS EFFLUENT AVERAGE > 15 MG/L
JAN/79-DEC/79												
OXIDATION DITCH												
SOUTHWESTERN												
PAISLEY	22	95	22	5.2	94	1	22	123	22	8.4	93	1
SOUTHAMPTON	26	67	27	2.7	95	0	75	56	68	9.5	82	0
WEST-CENTRAL												
GRAND VALLEY	24	130	24	6.4	95	0	52	195	52	12.4	93	4
HALDIMAND (CAYUGA)	24	97	24	2.3	97	0	24	146	24	8.0	94	1
WOOLWICH (ST.JACOBS)	30	242	30	5.7	97	0	71	273	64	16.8	93	6
CENTRAL												
FENELON FALLS	11	82●	11	6.3●	92	1	11	131●	11	10.9●	91	1
HASTINGS	10	408●	10	11.3●	97	2	11	1379●	11	22.7●	98	5
NORWOOD	18	83●	20	4.4●	94	1	18	123●	20	6.4●	94	1
NORTHEASTERN												
NICKEL CENTRE (CONISTON)	15	85	15	8.1	90	0	105	86	99	11.4	86	0

PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND: PLANT INFLUENT NO OF SAMPLES	BOD MG/L	PLANT EFFLUENT NO OF SAMPLES	BOD MG/L	REDUCTION %	NO. OF MONTHS EFFLUENT AVERAGE > 15 MG/L	SUSPENDED SOLIDS: PLANT INFLUENT NO OF SAMPLES	SS CONC MG/L	PLANT EFFLUENT NO OF SAMPLES	SS CONC MG/L	REDUCTION %	NO. OF MONTHS EFFLUENT AVERAGE > 15 MG/L
JAN/79-DEC/79												
(TERTIARY TREATMENT) EFFLUENT FILTRATION												
SOUTHWESTERN												
STRATFORD	49	94	49	5.4	94	0	50	152	50	4.5	97	0
WEST-CENTRAL												
ORANGEVILLE	24	84	24	4.1	95	0	51	133	51	5.9	95	0
SIMCOE	23	180	17	2.9	98	0	156	212	141	4.8	97	0

OTHER MACRO-NUTRIENTS

The arthmetic mean of the monthly values for total phosphorus and nitrogen in free ammonia, total kjeldahl, nitrate and nitrite are shown for plant influent and effluent.

OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/79-DEC/79										
PRIMARY										
SOUTHWESTERN										
OWEN SOUND	4.3	1.7	15	8.6	26	15.3	.50	1.09	.13	.12
POINT EDWARD	24.0	6.6	-	-	37	31.1	-	-	-	-
WEST-CENTRAL										
NANTICOKE (PORT DOVER)	8.3	.7	21	12.1	38	17.3	.21	.45	.04	.12
CENTRAL										
MIDLAND	30.1	10.0	13	10.3	22	16.6	1.40	3.00	.78	1.81
SOUTHEASTERN										
CORNWALL	3.6	2.5	8	6.8	16	13.3	.20	2.40	.05	.03
PETAWAWA	6.0	2.1	27	23.5	31	20.3	.27	.26	.06	.12
PRESCOTT	3.1	.7	-	-	13	12.1	-	-	-	-
NORTHEASTERN										
ESPANOLA	6.0	3.8	-	-	34	26.2	-	-	-	-
PARRY SOUND	7.0	1.6	18	14.0	22	15.8	.55	.72	.88	.82
SAULT STE MARIE	4.1	2.8	-	-	20	16.5	-	-	-	-
TIMMINS (MATTAGAMI)	5.1	3.2	23	8.6	30	18.6	.09	.55	.07	.08
NORTHWESTERN										
FORT FRANCES	3.2	2.8	-	-	17	13.7	-	-	-	-

OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/78-DEC/78										
CONVENTIONAL SECONDARY										
SOUTHWESTERN										
CHATHAM	15.1	.8	19	6.1	30	7.0	.14	6.98	.01	2.50
INGERSOLL (PLANT A)	9.0	.5	-	-	-	10.6	3.86	-	43.40	-
INGERSOLL (PLANT B)	9.0	.7	-	-	35	1.1	11.65	-	43.40	-
ST MARY'S	7.0	1.0	16	10.5	33	12.1	.30	.84	.08	.34
TILLSONBURG	6.7	.6	24	1.6	35	3.1	.10	17.28	.12	.08
TUCKERSMITH (VAN ASTRA)	4.6	.2	17	.5	21	.8	.19	11.26	.10	.05
WALLACEBURG	6.2	.6	23	3.5	33	8.0	.50	6.80	.08	.87
WEST-CENTRAL										
BRANTFORD	5.5	.8	9	6.6	26	8.9	.10	2.20	.01	.72
CAMBRIDGE (GALT)	5.6	.8	22	7.1	29	9.9	.10	3.34	.01	.99
CAMBRIDGE (PRESTON)	8.1	1.9	-	2.5	40	7.9		10.39	-	.70
DELHI	7.8	.2	34	13.1	46	13.7	.38	6.81	.02	.32
DUNNVILLE	3.6	.5	9	2.4	22	3.8	.25	4.95	.18	1.87
FERGUS	7.9	.8	17	5.6	35	8.5	.17	8.61	.10	.39
HALDIMAND (CALEDONIA)	6.2	.5	25	8.4	38	8.0	.15	11.00	.06	.34
HALDIMAND (HAGERSVILLE)	5.0	.5	24	12.2	34	13.8	.26	1.84	.11	.29
KITCHENER	8.3	.8	22	2.4	40	3.5	.10	18.67	.12	1.28
WATERLOO	6.7	.7	18	7.0	33	8.8	1.54	8.59	.06	.55
WOOLWICH (ELMIRA IND.)	2.5	-	39	-	53	-	110.00	-	9.50	-
WOOLWICH (ELMIRA TOWN)	6.9	-	-	-	-	-	-	-	-	-
WOOLWICH (TOWN & IND)	6.2	2.1	31	27.5	48	32.3	1.31	2.21	.41	2.03
CENTRAL										
CAMPBELLFORD	2.6	1.1	13	2.2	24	2.7	.38	5.12	.09	.21
SOUTH PEEL (LAKEVIEW)	10.2	1.3	13	7.8	64	11.7	.12	4.10	.02	1.28
SOUTHEASTERN										
BELLEVILLE	10.8	.7	-	-	45	12.6	-	-	-	-
KINGSTON TWP	5.3	2.2	27	13.4	35	13.7	.28	8.29	2.62	3.35
SIDNEY TWP (BATAWA)	3.7	1.0	9	2.1	14	1.4	3.08	2.76	.23	1.35
TRENTON	5.9	.9	-	-	24	7.0	-	-	-	-
NORTHEASTERN										
NORTH BAY	12.1	1.1	-	-	-	-	-	-	-	-
STURGEON FALLS	3.2	.5	13	1.8	19	5.0	.27	5.12	.05	.17
VALLEY EAST	6.8	2.9	28	11.8	41	15.0	.31	9.19	.14	.39

OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/79-DEC/79										
EXT AERATION/CONT STABLIZATION										
SOUTHWESTERN										
DRESDEN	6.2	.9	24	1.1	34	2.2	.23	17.33	.06	.27
MAIDSTONE BELLE RIVER	3.5	.6	15	.8	19	.8	2.11	15.17	.01	.01
MILDMAY	6.9	1.1	28	3.1	37	2.6	.12	22.40	.02	2.36
MOORE (CORUNNA)	8.3	1.7	-	-	48	1.0	-	-	-	-
MOORE (COURTRIGHT)	9.9	2.3	-	-	60	2.5	-	-	-	-
WESTMINSTER TWP	6.5	.7	23	4.2	34	5.1	.16	9.73	.02	.17
WEST-CENTRAL										
ELORA	6.9	.8	19	20.7	32	23.5	.08	.39	.06	.19
PARIS	5.5	2.2	17	16.4	37	22.2	.10	.15	.04	1.71
WELLESLEY	5.5	.7	18	.2	28	1.9	.90	16.65	.15	.01
WILMOT BADEN	14.9	1.1	18	3.8	36	4.3	.16	4.26	.08	.96
CENTRAL										
ALLISTON	6.8	3.7	19	.9	33	2.6	.11	10.20	.01	2.70
COLDWATER	4.2	3.2	24	3.0	31	5.4	.10	15.65	.02	.12
MILLBROOK	7.0	.5	25	.4	74	1.8	.11	13.77	.01	.02
PORT MC NICOLL	4.0	1.2	19	1.0	27	2.1	1.10	6.04	.10	.22
SMITH TOWNSHIP	6.6	2.0	2	.1	33	2.7	1.10	13.00	.11	.01
SOUTH PEEL (CLARKSON)	8.9	1.1	14	.2	30	1.8	.50	8.05	.47	.62
SOUTHEASTERN										
BANCROFT	3.4	2.7			23	2.3	-	-	-	-
BARRY'S BAY	12.1	1.0	16	6.1	54	13.7	1.06	7.24	.05	.23
CHALK RIVER	8.1	4.5	30	19.8	34	18.7	.24	1.06	.06	2.08
DESERONTO	5.1	.9	-	-	31	1.4	-	-	-	-
EGANVILLE	6.9	3.9	28	1.6	36	2.4	4.36	16.18	.06	1.68
ERNESTOWN (ODESSA)	4.1	.9	-	-	25	2.3	-	-	-	-
FRANKFORD	4.5	1.1	17	3.9	24	5.0	19.94	2.95	.08	.26
HAWKESBURY	2.5	1.6	7	.5	16	5.3	15.90	14.00	1.02	.36
L'ORIGNAL	4.6	2.4	-	-	22	4.0	-	-	-	-
MARMORA	4.8	1.0	-	-	26	2.1	-	-	-	-
MERRICKVILLE	6.4	1.5	-	-	35	3.3	-	-	-	-
PITTSBURG (CANA)	4.6	2.9	-	-	21	3.2	-	-	-	2.40
NORTHEASTERN										
BLACK RIVER MATHESON	3.9	1.5	-	-	18	2.1	-	-	-	-
HAILEYBURY	5.4	2.0	16	6.1	28	6.0	.27	3.52	.04	.25
IROQUOIS FALLS	5.3	1.8	-	-	28	7.1	-	-	-	-
KIRKLAND LAKE	3.4	1.4	12	5.8	17	8.6	.10	.81	.02	.06

OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/78-DEC/78										
LATCHFORD	4.0	1.2	12	.1	29	2.5	.16	11.50	.10	.07
MOOSONEE DEV'L AREA BD	3.7	.3	-	-	22	11.0	-	-	-	-
RAYSIDE BALFOUR AZILDA	3.7	3.0	17	.2	25	1.5	.66	16.13	2.65	.02
RAYSIDE BALFOUR CHLMSF'D	5.9	1.7	17	3.5	26	3.8	.39	5.45	.07	.27
SMOOTH ROCK FALLS	4.9	2.5	-	-	33	1.4	-	-	-	-
NORTHWESTERN										
EAR FALLS	4.1	1.1	-	-	22	2.9	-	-	-	-
GERALDTON	4.5	1.8	-	-	-	-	19.70	1.69	-	-
IGNACE	6.4	1.7	-	-	36	6.4	-	-	-	-
LONGLAC	6.2	3.6	-	-	28	14.0	16.53	5.90	-	-
PICKLE LAKE	2.5	3.1	-	-	12	3.6	-	-	-	-
RED LAKE	3.9	2.4	-	-	21	11.6	-	-	-	-
SCHREIBER	6.3	3.9	26	.3	36	4.5	.02	7.82	.02	.03

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OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/79-DEC/79										
HIGH RATE										
SOUTHWESTERN										
MEAFORD	4.8	2.0	14	.6	19	1.9	.55	7.96	.10	.35
WEST-CENTRAL										
CAMBRIDGE (HESPELER)	4.7	1.0	-	12.9	36	17.4	.10	.82	.10	.20
CENTRAL										
BRADFORD	8.2	.6	16	6.4	37	9.8	.30	11.55	.10	1.03
SOUTHEASTERN										
CARLETON PLACE	2.9	.9	-	-	13	5.0	-	-	-	-
NORTHEASTERN										
SUDBURY	4.7	1.6	16	13.0	28	15.2	.38	.50	.04	.14

OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/78-DEC/78										
OXIDATION DITCH										
SOUTHWESTERN										
PAISLEY	6.0	.8	20	.7	29	1.5	.10	11.13	.05	.32
SOUTHAMPTON	4.4	2.8	14	.5	25	.9	.40	10.02	.06	.61
WEST-CENTRAL										
GRAND VALLEY	10.2	1.8	51	10.1	74	11.9	.98	5.85	.15	.43
HALDIMAND (CAYUGA)	7.2	.5	25	.2	40	1.5	.18	22.68	.07	.12
WOOLWICH (ST.JACOBS)	7.6	.9	18	1.0	40	2.4	1.17	4.49	.34	.30
CENTRAL										
FENELON FALLS	5.1	.7	17	1.9	28	3.2	.12	10.97	.07	.54
HASTINGS	40.4	2.6	25	21.0	122	19.3	.14	6.82	.12	8.43
NORWOOD	6.1	.7	25	2.3	37	3.5	.69	16.08	.37	.83
NORTHEASTERN										
NICKEL CENTRE (CONISTON)	4.3	1.3	13	14.6	59	16.6	.18	.25	.06	.07

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OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/79-DEC/79										
(TERTIARY TREATMENT) EFFLUENT FILTRATION										
SOUTHWESTERN										
STRATFORD	5.0	.6	13	5.0	21	6.0	.35	8.13	.10	1.25
WEST-CENTRAL										
ORANGEVILLE	6.0	.9	20	5.8	31	7.2	.17	8.93	.22	.49
SIMCOE	7.5	.9	10	1.3	24	1.9	.10	9.87	.01	.30

OPERATION - DATA LAGOONS

The annual flow and average daily influent flow are shown on the following table.

The BOD, suspended solids, total phosphorus and total kjeldahl nitrogen concentrations are for the lagoon influent and effluent.

The majority of the lagoons are of the seasonal discharge type. Those which are not, are indicated in the 'Project' column by different abbreviations noted as follows:

(C-D)	Continuous Discharge
(AD)	Annual Discharge
(SPRAY)	Lagoon with Spray
(EXFILT)	Exfiltration.

When there is less than twelve months of data available for total flow, a dot (•) is used.

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OPERATION-DATA LAGOONS

PROJECT	<- FLOW -> TOTAL 1000 M3	AVG DAY 1000M3	<--- INFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOTAL P MG/L	TKN MG/L	<--- AERATION CELL ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	<--- EFFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOT P MG/L	TKN MG/L
JAN/79-DEC/79															
CONVENTIONAL LAGOON															
SOUTHWESTERN															
AYLMER	•	3.9	24	139.3	116.0	12.0	30.5				55	18.0	21.0	3.7	7.4
BELMONT	97.1	.3	25	104.7	72.5	7.3	40.5				14	15.5	11.3	1.1	7.7
CHESLEY (C-D)	•	1.4	10	80.7	82.1	4.5	19.5				10	7.5	5.1	1.8	4.1
DOVER (MITCHELL'S BAY) (AD)	37.4	.1	7	91.7	77.7	7.0	42.8				-	(NO DISCHARGE IN 1979)			-
DUNDALK	276.9	.8	9	55.7	62.2	4.0	28.7				20	8.7	16.1	.8	5.8
DUTTON	147.1	.4	12	148.6	112.7	8.7	58.3				13	12.7	18.7	.7	10.4
EAST ZORRA-TAVISTOCK	•	1.0	10	378.0	255.6	14.7	40.2				39	17.2	32.1	2.1	13.8
ENNISKILLEN OIL CITY	19.8	.1	4	131.3	102.3	8.2	30.8				3	21.7	42.7	2.5	9.8
ESSEX (N.E.) (AD)	228.8	.6	7	63.1	163.6	5.3	30.3				5	10.7	77.0	1.7	3.7
ESSEX (S.W.) (AD)	534.3	1.5	7	106.0	50.5	7.1	41.1				10	9.9	21.8	.6	3.2
FOREST	•	.7	-	-	-	-	-				-	(NO DISCHARGE IN 1979)			-
GLENCOE	127.4	.3	3	325.0	353.0	7.1	49.5				-	(NO DISCHARGE IN 1979)			-
GOSFIELD N. PV COTTAM	80.2	.2	7	76.3	49.4	5.6	43.3	-	5.6	23.5	2	4.2	19.8	.1	1.7
HARROW	345.2	.9	14	338.0	656.7	8.6	52.5				22	7.6	15.4	2.7	6.7
HENSALL	•	.4	4	99.5	180.5	6.1	37.3				-	(NO DISCHARGE IN 1979)			-
LUCAN	•	.8	3	66.0	62.3	4.9	41.9				-	-	-	-	-
MILVERTON	•	.7	24	882.1	554.1	18.2	52.8				8	84.0	33.7	1.5	20.4
MITCHELL	•	2.4	3	118.0	99.0	7.3	26.9				11	8.0	19.6	.7	5.0
MOORE (BRIGDEN)	43.2	.1	7	143.4	122.6	10.5	49.0	6	2.6	6.0	-	(NO DISCHARGE IN 1979)			-
NORWICH	26.9	.1	4	102.5	247.0	4.1	27.6				4	38.3	198.3	1.9	16.7
OIL SPRINGS	70.3	.2	4	90.5	128.0	6.8	32.9				3	27.7	72.7	2.6	13.9
PORT STANLEY	438.6	1.2	21	74.8	55.0	4.3	26.2				26	8.2	15.1	1.4	7.7
RALEIGH TILBURY E.MERLIN	57.8	.2	10	409.5	1540.8	21.4	71.0				-	(NO DISCHARGE IN 1979)			-
RIDGETOWN	275.4	.8	4	176.8	133.3	8.4	49.9				2	8.8	74.0	1.5	10.5
RODNEY	116.5	.3	11	499.2	1615.6	13.1	92.5				1	40.0	109.5	2.8	14.2
SARNIA BRIGHTS GROVE	181.4	.5	-	-	-	-	-				-	-	-	-	-
SEAFORTH	581.2	1.6	10	51.9	41.1	3.5	24.7				6	11.8	22.6	.6	7.1
SOMBRA (PORT LAMBTON)	111.0	.3	7	116.3	99.4	8.1	48.0	7	2.9	11.1	-	(NO DISCHARGE IN 1979)			-
SOMBRA (PORT SOMBRA)	51.8	.1	6	94.3	75.3	7.0	44.4	6	5.6	18.1	-	(NO DISCHARGE IN 1979)			-
TILBURY NORTH	229.3	.6	8	15.4	16.1	1.4	12.0				1	1.9	2.6	.3	-
TILBURY WEST PV COMBER	74.7	.2	10	114.3	65.8	6.3	64.3				2	5.1	97.5	.3	1.9
WATFORD	196.7	.5	-	-	-	-	-				-	(NO DISCHARGE IN 1979)			-
WEST LORNE	197.1	.5	13	66.7	75.6	3.5	23.8				9	4.0	19.7	.3	8.0
WIARTON (C-D)	801.7	2.2	12	76.2	91.6	4.3	18.2				10	16.4	42.6	1.6	6.8
WINGHAM (C-D)	1121.2	3.0	13	89.3	88.1	4.5	20.1				14	14.2	10.8	2.3	7.9
ZURICH	•	.4	3	160.3	350.3	7.6	25.9				-	-	-	-	-
WEST-CENTRAL															
ARTHUR	339.2	.9	8	143.3	153.1	7.1	46.0				25	15.2	25.2	.8	9.5
DUNNVILLE (OSWEGO PARK) (AD)	•	.2	9	181.4	369.4	28.6	66.9				-	38.4	31.5	3.6	16.3
HARRISTON	645.9	1.8	17	231.9	373.9	15.6	48.5				19	24.9	44.4	5.2	13.1
NANTICOKE JARVIS	293.1	.8	11	140.1	148.8	7.4	54.5				25	17.7	17.9	.8	9.0

OPERATION-DATA LAGOONS

PROJECT	<- FLOW -> TOTAL 1000 M3	AVG DAY 1000M3	<--- INFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOTAL P MG/L	TKN MG/L	<--- AERATION CELL ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	<--- EFFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOT P MG/L	TKN MG/L
JAN/79-DEC/79															
NORFOLK PORT ROWAN	94.8	.3	3	45.0	108.7	3.6	30.7				7	2.6	24.0	1.3	8.1
SHELBURNE (C-D)	553.2	1.5	18	133.0	144.8	7.1	31.5				18	28.8	49.6	3.6	15.8
WILMOT NEW HAMBURG	465.8	1.3	26	165.1	220.7	10.2	58.0				12	12.4	31.7	1.1	11.7
CENTRAL															
BEETON	277.0	.8	14	131.7	262.1	12.1	34.6				-	(NO DISCHARGE IN 1979)			-
HAVELOCK	223.5	.6	1	9.5	5.5	4.2	5.0				-	-	-	-	-
LAKEFIELD	422.8	1.2	8	153.8	289.4	12.8	47.9				6	22.4	21.8	1.1	11.7
OMEMEE (SPRAY)	15.4	-	11	102.5	162.7	6.8	48.8				7	6.5	9.4	1.6	5.3
SOUTHEASTERN															
ALFRED (AD)	186.1	.5	23	157.0	225.2	8.2	31.3				-	(NO DISCHARGE IN 1979)			-
CASSELMAN	206.2	.6	23	104.0	145.2	7.2	35.3				10	8.2	15.4	1.0	3.3
CHESTERVILLE	241.4	.8	15	60.8	67.5	16.0	25.9				2	5.0	19.5	4.8	8.0
GOULBOURN RICHMOND	526.6	1.4	24	80.8	115.5	5.2	24.0				15	13.6	13.7	1.6	6.4
LANCASTER	156.9	.4	15	115.0	265.4	6.3	21.4				2	26.0	13.0	1.4	-
LEEDS & LANDSOWNE(SPRAY)	40.8	.1	7	115.6	115.7	8.1	42.4				2	5.3	4.5	2.4	1.5
MADOC	•	.7	14	80.8	101.1	4.9	25.5				4	11.2	25.5	1.2	4.8
PLANTAGENET	208.5	.6	24	84.0	145.3	8.7	20.5				11	5.4	20.4	2.4	2.6
ROCKLAND	428.4	1.2	41	50.4	59.9	6.3	30.5				10	11.0	14.7	3.4	6.9
RUSSELL	•	.1	9	243.2	491.9	9.2	36.3				-	(NO DISCHARGE IN 1979)			-
ST. ISIDORE DE PRESCOTT	72.9	.2	25	186.8	229.9	13.4	43.7				-	(NO DISCHARGE IN 1979)			-
STIRLING	•	.6	-	-	-	-	-				-	-	-	-	-
TWEED	•	1.5	-	-	-	-	-				11	9.7	21.7	1.5	8.0
VANKLEEK HILL	240 4	.7	19	153.7	250.8	8.6	38.3				18	16.2	17.6	.6	9.8
WESTPORT	86.8	.2	7	64.6	67.4	4.6	26.0				7	8.9	20.2	3.9	25.4
WINCHESTER	302.9	.8	14	92.7	138.2	7.2	25.4								
NORTHEASTERN															
ASSIGINACK(MANITOWANING)	101.3	.3	25	84.5	105.0	5.2	31.8				16	7.2	28.5	1.5	5.0
BLACK R. MATHESON (V.G.)	-	-	19	35.2	56.0	3.1	23.8				18	6.8	12.5	2.2	5.8
BLACK R.MATHESON (C-D)	54.3	.1	21	96.2	172.6	10.8	47.7				12	39.7	39.9	4.5	22.2
BRUCE MINES	127.8	.3	20	130.8	194.2	4.8	26.8				10	9.8	23.6	1.7	8.5
BURKS FALLS	102.0	.3	10	105.0	118.5	6.5	38.9				5	6.5	17.3	1.6	5.3
CALDWELL VERNER	228.6	.6	1	56.0	70.0	2.8	51.0				16	8.0	40.4	.6	6.8
ENGLEHART (C-D)	580.6	1.6	24	46.6	92.1	3.4	20.9				19	12.3	15.2	2.2	8.3
FAUQUIER (MOONBEAM)	•	.5	14	151.8	218.2	9.0	23.7				12	7.2	103.7	1.4	5.4
HAILEYBURY N COBALT	158.9	.4	19	102.4	262.1	5.7	42.5				6	21.5	10.9	2.7	-
HEARST	•	3.8	8	72.2	91.3	4.5	24.0				38	71.4	45.9	3.2	19.8
LITTLE CURRENT (C-D)	202.8	.6	12	91.1	97.3	6.7	22.0				7	12.8	18.8	3.5	7.8
MATTAWA (EXFILT)	279.3	.8	19	60.3	61.8	4.1	22.8				20	22.7	21.2	3.0	16.5
MICHIPICOTEN (WAWA)(C-D)	•	3.2	2	35.0	32.5	-	-				2	17.5	10.0	-	-
NEW LISKEARD (C-D)	1847.3	5.0	18	86.5	121.8	5.1	21.1								

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 028

OPERATION-DATA LAGOONS

PROJECT	<- FLOW -> TOTAL 1000 M3	AVG DAY 1000M3	<--- INFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOTAL P MG/L	TKN MG/L	<--- AERATION CELL ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	<--- EFFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOT P MG/L	TKN MG/L
JAN/79-DEC/79															
NEW LISKEARD (CELL A-B)	-	-									17	9.4	17.6	2.8	6.7
NEW LISKEARD (CELL E-F)	-	-									18	9.4	13.4	3.1	6.5
NORTHHIMSWORTH(CALLANDER	179.2	.5	20	133.8	153.0	7.0	37.7				25	4.1	7.4	.4	14.7
OWENS,WILLIAMSON-IDING'T	•	.2	-	-	-	-	-				-	(NO DISCHARGE IN 1979)			-
POWASSAN (C-D)	156.6	.4	22	121.8	179.5	7.8	45.0				22	21.4	21.7	3.6	17.3
RATTER DUNNET WARREN	101.8	.3	8	197.3	347.5	8.5	38.1				2	1.1	5.5	.6	1.7
SHACKLETON & MACHIN FAUQ	146.4	.4	10	93.4	146.4	3.7	15.7				12	7.7	12.1	.7	4.8
SUNDRIDGE (AD)	107.6	.3	12	42.7	78.2	4.7	22.9				1	3.3	8.5	.6	8.4
WEBBWOOD	29.3	.1	9	202.9	188.3	11.0	68.7				1	26.0	45.0	2.3	19.0
NORTHWESTERN															
ATWOOD (RAINY RIVER)	388.3	1.1	12	48.7	94.2	3.5	22.1				10	8.5	22.2	1.2	7.2
EMO	129.9	.4	9	141.6	338.9	10.6	46.4				-	(NO DISCHARGE IN 1979)			-

OPERATION-DATA LAGOONS

PROJECT	<- FLOW -> TOTAL 1000 M3	AVG DAY 1000M3	<--- INFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOTAL P MG/L	TKN MG/L	<--- AERATION CELL ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L		<--- EFFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOT P MG/L	TKN MG/L
JAN/79-DEC/79																
AERATED CELL PLUS LAGOON																
SOUTHWESTERN																
DURHAM (C-D)	•	1.1	6	130.0	152.0	5.2	31.7	-	-	-	-	3	40.5	73.0	5.5	26.9
KINCARDINE (C-D)	1011.1	2.8	20	107.0	83.0	6.1	33.4	20	23.9	20.1	5.7	23	10.9	9.9	3.4	12.2
LISTOWEL (C-D + SPRAY)	1869.8	5.1	25	232.9	152.9	5.1	24.2	53	59.9	98.9	3.9	38	17.3	16.0	.9	9.5
THORNBURY	392.6	1.1	23	131.1	76.4	1.3	8.0	18	55.1	69.4	5.8	11	18.1	16.6	1.7	2.8
WEST-CENTRAL																
NANTICOKE (WATERFORD) (C-D)	463.6	1.3	17	198.2	93.9	3.8	19.8	17	35.8	44.0	-	17	19.2	39.9	2.5	11.4
SOUTHEASTERN																
ALEXANDRIA (C-D)	2159.0	5.9	30	192.5	405.6	14.4	18.5	21	51.1	55.2	-	19	25.0	34.3	11.0	10.0
ALMONTE	873.2	2.4	22	71.6	78.8	4.6	22.1	-	-	-	-	11	7.6	12.8	1.9	1.7

PROJECT STAFF

During 1979 the 194 wastewater treatment facilities employed a total of 442 staff. The fractional figures shown, arise from joint operation of water projects in the same municipality (see Water Supply 1979 Operating Summary) or employment of part-time staff.

PROJECT STAFF

PROJECT	SUPERINTENDENT	ASS'T SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
PRIMARY TREATMENT																
Region 1 - Southwest																
Owen Sound			1		3		1						.5			5.50
Point Edward			1		.5											1.50
Region 2 - West Central																
Hanticoke (Port Dover)	1.87				1											2.87
Region 3 - Central																
Midland			1		2											3.00
Region 4 - Southeast																
Cornwall	1	1			4	1	1						2			10.00
Petawawa			.75		2		1									3.75
Prescott			1		1											2.00
Region 5 - Northwest																
Espanola			.5			.5										1.00
Parry Sound			1		2											3.00
Sault Ste. Marie	.83	1			7		1	1								10.83
Timmins (Mattagami)			1		4									1		6.00
Region 6 - Northwest																
Fort Frances	.8		.8													1.60
CONVENTIONAL ACTIVATED SLUDGE																
Region 1 - Southwest																
Chatham	1			1	7	1	1	1			1					12.00
Ingersoll			1		2								.25			3.25
St. Mary's			1		1								.25			2.25
Tillsonburg			1		2								.25			3.25
Tuckersmith (Van Astra)			.5		.5								.25			1.25
Wallaceburg			1		2.55		1						.45			5.00
Region 2 - West Central																
Brantford	1	1			10	1	2			1		2				18.00
Cambridge (Galt)	1				4		1			1						7.00
Cambridge (Preston)	1				3		1			1						6.00
Delhi	1				1											2.00
Dunnville	1				1		1									3.00
Fergus	.75				.75											1.50
Haldimand (Caledonia)	1				1											2.00
Haldimand (Hagersville)	.75				.75											1.50
Kitchener	1	1			9	1	3	1		1		4				21.00
Waterloo	1				4		2	1		1						9.00
Woolwich (Elmira)	.75				.75											1.50
Region 3 - Central																
Campbellford			.3	1	1											2.30
Mississauga (Lakeview-(S.Peel	1		3	10	23	1	12	2	3	2	7	2	8	1	8	83.00
Region 4 - Southeast																
Belleville	.33	.33			6					1						7.66
Kingston Twp.	.25	.25			2	.5	.5									3.50
Sidney (Batawa)			.25		.25											0.50
Trenton	1				3		1									5.00
Region 5 - Northeast																
North Bay	1	1			5		2			1						10.00
Sturgeon Falls			.82		1.5								1			3.32
Valley East (H.,V.C.&V.T.)			.5		2								2			4.50

PROJECT	SUPERINTENDENT	ASS'T SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
EXTENDED AERATION/CONT STABILIZATION																
Region 1 - Southwest																
Dresden			1		2								.25			3.25
Maidstone (Belle River)			1		2.25								.25			3.25
Mildmay																
Moore (Corunna)			1		.5											1.50
Moore (Courtright)					1											1.00
Westminster Twp			1										.5			1.50
Region 2 - West Central																
Elora	.25				.25											.50
Paris	1															1.00
Wellesley														1		1.00
Wilmot (Baden)																-
Region 3 - Central																
Alliston			.88		1.75											2.63
Anson, Hindon & Hindon																-
Coldwater			.3											1		1.30
Millbrook			.4											.5		0.90
Mississauga (Clarkson-S.Peel)			1		4		1				1		4			11.00
Port McNicoll														2		2.00
Smith (Woodland Acres)			.2		1											1.20
Region 4 - Southeast																
Bancroft			1		1											2.00
Barry's Bay			.7		.7											1.40
Chalk River			.25		.75											1.00
Deseronto	.25				1											1.25
Eganville			.75		.75											1.50
Ernestown (Odessa)	.125				.5											0.625
Frankford			.5		.5											1.00
Hawkesbury	1	1			4		1									7.00
L'Orignal																
Marmora			.5		.38											0.88
Merrickville	.25				.5											0.75
Pittsburg (Cana)	.25	.25			1											1.50
Region 5 - Northeast																
Black River-Matheson			.78											.78		1.56
Haileybury			.24			.75							.29			1.28
Iroquois Falls			1			1							1			3.00
Kirkland Lake			1			2							1			4.00
Latchford			.12			.5										.62
Moosonee (North)			.25			.5							.5			1.25
Moosonee (Old Townsite)			.25			.5							.5			1.25
Rayside-Balfour (Azilda)			.5													0.50
Rayside-Balfour (Chelmsford)			.5			1										1.50
Smooth Rock Falls			1										1			2.00
Wicksteed (Hornepayne)			.5			.5							.75			1.75
Region 6 - Northwest																
Ear Falls			.2			1.0							.3			1.50
Geraldton			1		1								1			3.00
Ignace			1										.5			1.50
Longlac					1								.5			1.50
Pickle Lake			1										.5			1.50
Red Lake			.2		.5								.8			1.50
Schreiber			1										.5			1.50

PROJECT STAFF

PROJECT	SUPERINTENDENT	ASS'T SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
HIGH RATE ACTIVATED SLUDGE																
Region 1 - Southwest																
Meaford			.5		1.5								.25			2.25
Region 2 - West Central																
Cambridge (Hespeler)	1				1											2.00
Region 3 - Central																
Bradford			1		1											2.00
Region 4 - Southeast																
Carleton Place	.25				1											1.25
Region 5 - Northeast																
Sudbury	1	1				9		2	1				1			15.00
OXIDATION DITCH																
Region 1 - Southwest																
Paisley			1										.25			1.25
Southampton			.5		1								.25			1.75
Region 2 - West Central																
Grand Valley	.25				.25		.25									0.75
Haldimand (Cayuga)	.25				.25											0.50
Woolwich (St. Jacobs)	.25				.25											0.50
Region 3 - Central																
Fenelon Falls			.5		1											1.50
Hastings			.3		1											1.30
Norwood			.2		1											1.20
Region 5 - Northeast																
Nickel Centre (Coniston)					1								1			2.00
TERTIARY TREATMENT																
Region 1 - Southwest																
Stratford	1			1	4		1						.25			7.25
Region 2 - West Central																
Orangeville	.75			1.75			.75									3.25
Simcoe	1			2.87			2									5.87

PROJECT	SUPERINTENDENT	ASST SUPT.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
WASTE STABILIZATION PONDS																
Region 1 - Southwest																
Aylmer														.25	.5	.5
Belmont														.25	.5	.5
Chesley														.25	.2	.25
Dover (Mitchell's Bay)														.25	.2	.25
Dundalk														.25		.25
Dutton														.25		.25
East Zorra - (Tavistock)														.25	.25	.5
Enniskillen (Oil City)														.25		.25
Essex N. E.														.25		.25
Essex S. W.														.25		.25
Forest														.25		.25
Glencoe														.25		.25
Gosfield N. (Cottam)														.25	.25	.25
Harrow														.25		.25
Kensall														.25		.25
Lucan														.25		.25
Milverton														.25		.25
Mitchell														.25	.3	.3
Moore (Brigden)														.25	.25	.25
Norwich														.5	.5	.5
Oil Springs														.5		.5
Port Stanley																
Raleigh & Tilbury E. (Merlin)														.25		.25
Ridgetown														.25		.25
Rodney																
Sarnia (Bright's Grove)														.25		.25
Seaforth														.25	.3	.3
Southbra (Port Lambton)															.3	.3
Southbra (Port Sombra)														.25		.25
Tilbury N (Stoney Point)														.25		.25
Tilbury W. (Comber)														.25		.25
Watford														.25		.25
West Lorne														.25		.25
Wiarton														.25		.25
Winghan														.25		.25
Zurich														.25		.25
Region 2 - West Central													1			1
Arthur																2
Dunnville (Oswego Park)	1					1										
Harriston																
Hanticoke (Jarvis)	.125												1			.125
Norfolk (Port Rowan)																1
Shelburne																-
Wilmot (New Hamburg)																-
Region 3 - Central																
Beeton			.12		.25											.37
Havelock			.1													1.1
Lakefield			.3													1.1
Omemee			.1													1.1

PROJECT STAFF

PROJECT	SUPERINTENDENT	ASS'T SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
Region 4 - Southeast																
Alfred																
Casselman																
Chesterville			1		1											2
Goulbourn (Richmond)	125				.5											.625
Lancaster					.25											.25
Leeds & Lansdowne			.25										.5			.75
Madoc					125											.125
Plantagenet																
Rockland																
Russell																
St. Isidore de Prescott																
Stirling	.3	.3			.5											1.1
Tweed	.3	.3			.5											1.1
Vankleek Hill																
Westport			.25													.25
Winchester																
Region 5 - Northeast																
Assiginack (Manitowaning)														.5		.5
Black R.-Matheson (Ramore)			.1											.1		.2
Black R.-Matheson (V.G.)			.02											.2		.04
Bruce Mines	.05				.38											.43
Burk's Falls														1		1
Caldwell (Verner)			.04		.6											.64
Englehart														1		1
Fauquier (Moonbeam)			1											.1		.2
Haileybury (N. Cobalt)			.24		.25								.05			.54
Hearst														1		1
Little Current																-
Mattawa																-
Michipicoten (Wawa)																-
New Liskeard																-
N. Himsworth (Callander)														.65		.65
Owens W.I. (Val Rita)														1		1
Powassan																-
Ratter & Dunnet (Warren)			.06											.7		.76
Shackleton & Machin (Fauquier)			.3											.3		.6
Sundridge														2		2
Webbwood														1		1
Region 6 - Northwest																
Atwood (Rainy River)			.05											.3		.35
Emo	.05		.05											.2		.3
AERATED LAGOONS																
Region 1 - Southwest																
Durham														.25		.25
Kincardine					1											1
Listowel			1													1
Thornbury	.5				.5											1
Region 2 - West Central																
Nanticoke (Waterford)					.13											.13
Region 4 - Southeast																
Alexandria					.5											.5
Almonte	.125				.5											.625

OPERATING COST SUMMARY - MECHANICAL PLANTS

OPERATING EXPENDITURES - MECHANICAL PLANTS

OPERATING EXPENDITURES - LAGOONS

The unit operating costs for mechanical sewage treatment plants are shown. Figures marked with a dot (•) are estimates based on less than twelve months of data.

OPERATING COST SUMMARY -- MECHANICAL PLANTS

PROJECT	TOTAL OPERATING COST dollars	UNIT OPERATING COSTS		
		$ / 1000m3	¢/kgBODrem	¢/kg SS rem
PRIMARY TREATMENT				
Region 1 - Southwest				
Owen Sound	250,896	42*	37*	38*
Point Edward	67,823	93	77*	63*
Region 2 - West Central				
Nanticoke (Port Dover)	86,795	61	25	15
Region 3 - Central				
Midland	164,710	53	101	30
Region 4 - Southeast				
Cornwall	504,077	28	416*	82*
Petawawa	201,928	147	231	267
Prescott	94,616	60	230	112
Region 5 - Northeast				
Espanola	31,643	36	68	35
Parry Sound	125,305	61	217	92
Sault Ste. Marie	431,775	22	35	25
Timmins (Mattagami)	175,409	24	53	19
Region 6 - Northwest				
Fort Frances	122,950	34	226	52
CONVENTIONAL ACTIVATED SLUDGE				
Region 1 - Southwest				
Chatham	173,201	40	21*	14*
Ingersoll	138,630	77	47*	22*
St. Mary's	108,372	99	33	17
Tillsonburg	147,646	86	51	42
Tuckersmith (Van Astra)	48,193	183	594*	587*
Wallaceburg	243,753	121	83	45
Region 2 - West Central				
Brantford	667,924	45	30	20
Cambridge (Galt)	362,549	34	29	24
Cambridge (Preston)	269,483	94	20	29
Delhi	82,098	125	103	74
Dunnville	125,071	77	51	55
Fergus	59,124	55	53	31
Haldimand (Caledonia)	75,302	109	113	79
Haldimand (Hagersville)	66,046	134	235	159
Kitchener	1,060,265	47	23	18
Waterloo	499,790	45	23	22
Woolwich (Elmira)	74,580	62	48*	59*
Region 3 - Central				
Campbellford	95,796	46	118*	41*
Mississauga (Lakeview) (Clarkson)	4,691,258	56	20	20
Region 4 - Southeast				
Belleville	453,285	42	26	12
Kingston Twp.	182,207	43	27	33
Sidney (Batawa)	22,593	98	342	164
Trenton	372,568	106	68	64
Region 5 - Northeast				
North Bay	481,166	40	24*	10
Sturgeon Falls	108,794	42	88	76
Valley East (H.,V.C. & V.T.)	189,258	98	160	83

OPERATING COST SUMMARY -- MECHANICAL PLANTS

PROJECT	TOTAL OPERATING COST dollars	UNIT OPERATING COSTS		
		$ / 1000m^3	¢/kgBODrem	¢/kg SS rem
EXTENDED ACRATION/CONT.STABILIZATION				
Region 1 - Southwest				
Dresden	122,933	314	218	122
Maidstone (Belle River)	151,990	182	148	404
Mildmay	48,010	435	413	307
Moore (Corunna)	82,490	156	145	171
Moore (Courtright)	39,506	304	192*	169*
Westminster TWP	54,372	87	84*	68*
Region 2 - West Central				
Elora	21,849	65	65	63
Paris	49,522	72	60	59
Wellesley	22,318	155	223	139
Wilmot (Baden)	29,901	163	61	92
Region 3 - Central				
Alliston	108,920	110	46	51
Coldwater	31,621	168	355	282
Millbrook	36,639	199	45	185
Port McNicoll	37,216	95	191	130
Smith (Woodland Acres)	27,559	300	284	113
Region 4 - Southeast				
Bancroft	70,032	188	530	380
Barry's Bay	48,025	294	167	150
Chalk River	35,949	248	238	200
Deseronto	46,493	123	132	101
Eganville	39,086	281	210	171
Ernestown (Odessa)	38,157	146*	515*	448*
Frankford	55,534	159	305	219
Hawkesbury	207,561	49	31*	38*
L'Orignal	19,812	59	151*	96*
Marmora	34,070	198	420*	293*
Merrickville	39,208	284	340	318
Pittsburgh (Cana)	7,579	216	445	315
Region 5 - Northeast				
Black River-Matheson (M)	45,559	115	318	219
Haileybury	49,042	50	68*	35*
Iroquois Falls	82,292	67	120	50
Kirkland Lake	231,392	37	148*	68*
Latchford	20,907	181	342	246
Moosonee (North)	45,662	1,022	-	-
Moosonee (Old Townsite)	19,356	80	1,935*	-
Rayside-Balfour (Azilda)	74,069	104*	259*	120*
Rayside-Balfour (Chelmsford)	79,009	62*	71*	24*
Smooth Rock Falls	51,964	89	167	77
Wicksteed (Hornepayne)	71,885	312*	-	-
Region 6 - Northwest				
Ear Falls	65,519	207	311	140
Geraldton	67,589	469	711*	422*
Ignace	53,164	190	199	152
Longlac	60,264	249	449*	296*
Pickle Lake	58,348	452	1,423	884
Red Lake	65,237	117	274*	186*
Schreiber	41,408	98	187*	2,760*

OPERATING COST SUMMARY -- MECHANICAL PLANTS

PROJECT	TOTAL OPERATING COST dollars	UNIT OPERATING COSTS		
		$ / 1000m^3	¢/kgBODrem	¢/kg SS rem
HIGH RATE ACTIVATED SLUDGE				
Region 1 - Southwest				
Meaford	98,710	99	193*	125
Region 2 - West Central				
Cambridge (Hespeler)	128,531	70	46	39
Region 3 - Central				
Bradford	113,422	119	64	29
Region 4 - Southeast				
Carleton Place	65,528	26	111	66
Region 5 - Northeast				
Sudbury	756,610	38	52	41
OXIDATION DITCH				
Region 1 - Southwest				
Paisley	36,064	273	298	231
Southampton	83,905	172	276	390
Region 2 - West Central				
Grand Valley	32,554	287	285	193
Haldimand (Cayuga)	33,787	136	149	96
Woolwich (St. Jacobs)	35,796	94	44	39
Region 3 - Central				
Fenelon Falls	50,855	141	215*	136*
Hastings	75,683	557	221*	62*
Norwood	52,508	310	464*	307*
Region 5 - Northeast				
Nickel Centre (Coniston)	46,566	81	81*	109
TERTIARY TREATMENT				
Region 1 - Southwest				
Stratford	299,234	37	44	26
Region 2 - West Central				
Orangeville	151,793	53	70	44
Simcoe	271,730	75	40	35

OPERATING EXPENDITURES ---- MECHANICAL PLANTS

PROJECT	GRAND TOTAL	REGULAR STAFF	UNCLASS. STAFF	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	SLUDGE HAULAGE	REPAIRS AND MAINT'CE	OTHER SERVICES
PRIMARY TREATMENT										
Region 1 - Southwest										
Owen Sound	250,896	-	-	96,899	14,677	2,623	1,985	14,918	3,039	5,084
Port Edward	67,823	-	-	28,284	8,770	(854)	973	3,420	191	(1,812)
Region 2 - West Central										
Nanticoke (Port Dover)	86,735	-	-	36,402	11,295	1,029	1,444	5,115	579	389
Region 3 - Central										
Midland	164,710	-	-	52,707	10,300	1,747	1,319	25,657	7,541	1,551
Region 4 - Southeast										
Cornwall	504,077	-	-	155,749	22,839	7,979	1,714	42,515	13,024	16,668
Petawawa	201,928	-	-	72,243	8,017	2,596	899	-	18,949	6,810
Prescott	94,616	-	-	37,554	5,960	1,606	561	3,948	3,846	3,730
Region 5 - Northeast										
Espanola	31,643	-	-	12,483	1,451	1,579	777	255	-	153
Parry Sound	125,305	-	-	53,586	8,716	2,316	1,327	-	1,385	508
Sault Ste. Marie	431,775	187,063	-	187,063	30,302	5,400	5,850	21,269	9,574	3,312
Timmins (Mattagami)	175,409	-	-	72,067	16,603	1,794	1,796	17,748	5,731	(364)
Region 6 - Northwest										
Fort Frances	122,950	48,790	13,874	62,664	13,336	2,881	2,064	2,837	4,550	4,360
CONVENTIONAL ACTIVATED SLUDGE										
Region 1 - Southwest										
Chatham	173,201	-	-	58,996	28,979	2,595	5,055	9,087	6,983	2,215
Ingersoll	138,630	-	-	60,872	8,743	3,276	441	5,081	663	1,970
St. Mary's	108,372	-	-	39,515	6,094	1,584	408	6,491	1,080	969
Tillsonburg	147,646	-	-	53,438	8,997	2,554	406	10,836	1,602	8,403
Tuckersmith (Van Astra)	48,193	-	-	27,090	3,673	1,690	1,578	-	59	2,592
Wallaceburg	243,753	-	-	82,365	14,819	3,727	836	23,688	15,372	2,691
Region 2 - West Central										
Brantford	667,924	-	-	264,201	43,358	4,056	6,307	7,362	31,447	25,333
Cambridge (Galt)	362,549	-	-	123,285	22,193	3,796	925	54,915	5,038	3,844
Cambridge (Preston)	269,483	-	-	96,839	15,206	2,547	709	31,174	-	5,012
Delhi	82,098	-	-	35,288	4,695	1,395	1,168	7,534	2,893	1,998
Dunnville	125,071	-	-	56,957	8,988	1,226	1,309	5,540	5,770	1,140
Fergus	59,124	-	-	30,686	3,479	1,376	749	3,523	736	391
Haldimand (Caledonia)	75,302	-	-	35,931	5,820	1,364	906	6,875	338	638
Haldimand (Hagersville)	66,046	-	-	30,922	3,276	127	621	3,881	806	547
Kitchener	1,060,265	-	-	339,939	59,697	6,966	7,355	263,566	6,556	2,758
Waterloo	499,790	-	-	153,442	24,979	4,182	4,710	83,132	7,568	7,947
Woolwich (Elmira)	74,580	-	-	33,469	3,935	2,284	1,029	5,411	1,660	348
Region 3 - Central										
Campbellford	95,796	-	-	52,929	4,813	3,148	521	4,200	6,484	1,614
Mississauga (Lakeview) (Clarkson)	4,691,258	1,346,045	-	1,346,045	210,782	21,209	-	609,474	106,298	113,340
Region 4 - Southeast										
Belleville	453,285	-	-	160,819	25,736	1,816	1,598	62,063	20,632	7,505
Kingston Twp.	182,207	-	-	77,922	9,464	3,533	2,936	14,941	5,830	(428)
Sidney (Batawa)	22,593	-	-	11,662	3,214	497	319	144	-	5
Trenton	372,568	-	-	92,215	14,128	3,051	1,949	54,724	9,293	24,100
Region 5 - Northeast										
North Bay	481,166	-	-	181,984	28,600	9,549	1,627	28,895	8,496	3,979
Sturgeon Falls	108,794	-	-	42,898	3,908	2,009	772	6,823	2,930	388
Valley East (H., V.C.&V.T.)	189,258	-	-	78,152	12,977	2,484	1,175	10,803	6,818	2,008

OPERATING EXPENDITURES ------- MECHANICAL PLANTS

PROJECT	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TRANSACTIONS	INTER MINISTRY EXP. REFUNDS
PRIMARY TREATMENT										
Region 1 - Southwest										
Owen Sound	25,026	8,963	51,985	43,536	7,187	111,671	-	-	-	-
Port Edward	2,777	312	7,530	7,603	12,192	27,637	-	-	1,214	-
Region 2 - West Central										
Nanticoke (Port Dover)	7,523	-	14,920	9,327	6,299	30,546	-	-	-	-
Region 3 - Central										
Midland	36,068	392	38,139	14,392	10,965	63,888	-	-	-	-
Region 4 - Southeast										
Cornwall	73,921	9,830	127,522	46,013	29,836	213,201	-	-	30,388	-
Petawawa	26,658	11,511	14,645	12,650	25,843	64,699	27,715	-	-	-
Prescott	12,085	738	12,579	14,962	6,733	35,012	720	-	1,679	-
Region 5 - Northeast										
Espanola	1,185	468	2,777	7,009	4,691	14,945	-	-	-	-
Parry Sound	4,920	266	25,460	25,465	4,572	55,763	-	-	-	-
Sault Ste. Marie	40,005	5,628	34,435	100,708	14,420	155,191	7,901	-	5,883	-
Timmins (Mattagami)	24,911	6,373	1,708	39,639	12,304	60,024	10	-	-	-
Region 6 - Northwest										
Fort Frances	13,811	1,769	7,632	13,899	6,958	30,258	-	-	-	-
CONVENTIONAL ACTIVATED SLUDGE										
Region 1 - Southwest										
Chatham	23,340	10,422	14,975	26,669	7,225	59,291	-	-	-	-
Ingersoll	8,155	4,005	9,645	34,180	4,905	52,735	-	-	4,849	-
St. Mary's	8,948	5,909	6,576	15,376	13,236	41,096	11,135	-	-	-
Tillsonburg	21,247	18,233	16,134	20,820	6,223	61,410	-	-	-	-
Tuckersmith (Van Astra)	4,229	1,154	-	5,499	4,067	10,720	-	-	791	-
Wallaceburg	42,587	5,553	58,188	32,083	(632)	95,192	5,063	-	-	-
Region 2 - West Central										
Brantford	70,449	15,909	73,189	126,562	31,274	246,934	-	-	38,926	-
Cambridge (Galt)	64,722	3,116	53,434	76,830	15,173	148,553	-	-	-	-
Cambridge (Preston)	36,895	32,452	20,006	44,493	21,045	117,996	-	-	-	-
Delhi	13,593	4,622	12,951	366	9,188	27,127	-	-	-	-
Dunnville	13,759	1,365	7,040	29,401	6,335	44,141	-	-	-	-
Fergus	4,617	445	7,513	10,649	359	18,966	-	-	-	-
Haldimand (Caledonia)	8,757	171	3,603	8,315	11,341	23,430	-	-	-	-
Haldimand (Hagersville)	5,855	5,858	8,787	4,793	6,428	25,866	-	-	-	-
Kitchener	280,235	5,240	100,264	183,026	54,847	343,377	30,061	-	6,745	-
Waterloo	103,357	9,759	38,599	127,960	30,697	207,015	70	-	-	-
Woolwich (Elmira)	8,448	610	6,442	12,151	3,992	23,195	3,249	-	-	-
Region 3 - Central										
Cambellford										
Mississauga (Lakeview) (Clarkson)	829,113	231,323	346,609	1,454,178	142,276	2,178,386	100,411	-	5,312	-
Region 4 - Southeast										
Belleville	91,798	..,252	46,400	84,241	13,995	145,891	27,018	-	207	-
Kingston Twp.	23,279	2,288	11,729	52,798	1,194	68,009	-	-	-	-
Sidney (Batawa)	468	383	1,024	4,075	1,270	6,752	-	-	-	-
Trenton	90,066	682	23,915	76,821	29,819	131,237	-	-	41,871	-
Region 5 - Northeast										
North Bay	42,997	3,925	57,123	109,195	28,807	199,050	18,986	-	-	-
Sturgeon Falls	10,913	12,786	6,600	23,582	2,754	45,722	3,013	-	331	-
Valley East (H.,V.C.&V.T.)	20,804	2,275	6,167	57,887	6,631	72,960	5	-	1,876	-

OPERATING EXPENDITURES ---- MECHANICAL PLANTS

PROJECT	GRAND TOTAL	REGULAR STAFF	UNCLASS. STAFF	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	SLUDGE HAULAGE	REPAIRS AND MAINT'CE	OTHER SERVICES
EXTENDED AERATION/CONT STABILIZATION										
Region 1 - Southwest										
Dresden	122,933	-	-	5,2091	11,336	3,942	397		103	2,138
Haldstone (Belle River)	151,990	-	-	56,385	10,731	(875)	700	8,395	69	8,888
Mildmay	48,010	-	-	22,308	3,456	2,469	141		1,974	3,397
Moore (Corunna)	82,490	-		23,079	13,669	(695)	896	15,928	-	457
Moore (Courtright)	39,506	-	-	24,948	3,077	1,168	149	1,940	-	1,332
Westminster TWP	54,372	-	-	28,026	3,480	1,173	578	3,640	808	1,519
Region 2 - West Central										
Elora	21,849	-	-	8,021	2,163	1,524	366	1,118	79	481
Paris	49,522	-	-	21,140	3,160	2,695	630	3,002	358	
Wellesley	22,318	-	-	10,389	829	666	104	1,517	187	849
Wilmot (Baden)	29,901	-	-	52	10	541	16	2,377	566	15,101
Region 3 - Central										
Alliston	108,920	-	-	46,805	6,247	2,100	330	27,173	28	227
Anson, Hindon & Minden	31,353	-	-			1,352	465	606	96	13,265
Coldwater	31,621	-	-	18,541	58	1,209	119	2,016	720	916
Millbrook	36,639	-	-	18,976	496	1,130	164	2,340	371	195
Port McNicoll	37,216	-	-	20,043	2,100	1,437	155	2,017	3,038	1,184
Smith (Woodland Acres)	27,559	-	-	13,045	2,142	1,103	66	135	193	941
Region 4 - Southeast										
Bancroft	70,032	-	-	35,545	5,701	2,260	872	-	229	(978)
Barry's Bay	48,025	-	-	22,429	1,051	(458)	1,125	-	152	2,723
Chalk River	35,949	-	-	13,198	3,846	1,299	422	-	2,582	1,600
Deseronto	46,493	-	-	11,040	1,724	774	552		8,660	1,362
Eganville	39,086	-	-	22,147	757	1,006	511	2,431	921	1,409
Ernestown (Odessa)	38,157	-	-	14,467	4,501	(165)	618	500	3,679	(1,765)
Frankford	55,534	-	-	25,267	5,844	(6,136)	812	1,426	8	434
Hawkesbury	207,561	-	-	82,591	12,726	5,790	466	-	1,433	1,467
L'Orignal	19,812	-	-	6,573	972	324	772	-	625	1,114
Marmora	34,070	-	-	9,669	2,494	7,819	626	330	1,078	431
Merrickville	39,208	-	-	22,999	1,937	1,139	426	876	814	557
Pittsburgh (Cana)	7,579	-	-	3,595	600	241	64	-		175
Region 5 - Northeast										
Black River-Matheson (M)	45,559	-	-	23,395	2,686	2,549	149	864	241	165
Haileybury	49,042	-	-	25,824	3,763	224	191	1,360	3,768	(9)
Iroquois Falls	82,292	32,865	5,981	38,846	8,544	1,378	468	10,483	1,102	39
Kirkland Lake	231,392	62,849	1,350	64,199	9,525	5,484	410	18,431	11,460	15,047
Latchford	20,907	-	-	11,241	2,019	-	128	-	-	25
Moosonee (North)	45,662	15,623	2,976	18,599	2,221	404	250	-	2,897	(98)
Moosonee (Old Townsite)	19,356	9,440	-	9,440	1,650	250	602	-	-	3
Rayside-Balfour (Azilda)	74,069	-	-	35,048	5,610	1,639	428	1,618	1,655	1,000
Rayside-Balfour (Chelmsford)	79,009	-	-	37,870	6,138	2,201	226	4,506	774	-
Smooth Rock Falls	51,964	19,697	5,370	25,067	3,052	1,935	175	1,892	482	-
Wicksteed (Hornepayne)	71,885	33,636	-	33,636	88	1,178	402	200	-	9,828
Region 6 - Northwest										
Ear Falls	65,519	28,145	1,220	29,635	2,601	5,168	584	-	1,320	1,619
Geraldton	67,589	-	-	29,000	3,843	4,462	19	-	245	7,170
Ignace	53,164	-	-	27,921	3,267	2,172	483	-	1,472	398
Longlac	60,264	-	-	26,477	4,689	1,995	468	1,598	798	6,248
Pickle Lake	58,348	8,894	4,875	13,769	2,712	7,738	408	-	116	14,886
Red Lake	65,237	8,264	12,631	20,895	7,167	2,146	183	-	4,176	11,714
Schreiber	41,408	-	-	18,463	2,631	1,314	462	-	916	5,582

OPERATING EXPENDITURES ------- MECHANICAL PLANTS

PROJECT	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TR'S'CT'NS	INTER MINISTRY EXP. REFUNDS
EXTENDED AERATION/CONT STABILIZATION										
Region 1 - Southwest										
Dresden	2,638	8,402	11,557	17,160	13,010	50,129	2,640	-	157	-
Maidstone (Belle River)	18,052	1,83[illegible]	11,00[illegible]	35,342	16,620	64,798	1,073	-	1,826	-
Mildmay	5,512	1,643	1,329	6,437	3,763	13,172	610	-	483	-
Moore (Corunna)	17,281	403	5,481	14,229	7,617	27,730	337	204	885	-
Moore (Courtright)	3,421	-	564	5,214	1,035	6,813	-	-	79	-
Westminster Twp.	6,545	281	1,162	7,018	6,687	15,148	-	-	-	-
Region 2 - West Central										
Elora	2,044	40	504	3,871	2,662	7,077	124	-	896	-
Palmerston Town	1	631	-	-	76	707	-	-	-	-
Paris	3,990	2,992	6,007	7,735	1,803	18,537	-	-	-	-
Wellesley	2,657	-	2,269	4,065	-	7,777	-	-	-	-
Wilmot (Baden)	18,060	1,208	2,941	4,904	564	9,617	-	-	1,621	-
Region 3 - Central										
Ailiston	27,758	4,672	2,072	11,504	7,762	26,010	-	-	-	-
Anson Hindon & Minden	14,432	1,599	534	8,648	3,547	14,328	105	-	1,136	-
Coldwater	3,771	446	272	6,574	571	7,863	179	-	-	-
Millbrook	3,070	910	3,886	4,230	3,376	12,402	565	-	-	-
Port McNicoll	6,394	550	1,078	4,627	978	7,233	-	-	9	-
Smith (Woodland Acres)	1,335	649	-	6,262	3,023	9,934	-	-	-	-
Region 4 - Southeast										
Bancroft	123	4,702	1,071	11,065	7,428	24,266	-	-	2,137	-
Barry's Bay	4,000	1,741	2,166	6,961	9,792	20,660	-	-	341	-
Chalk River	4,604	195	700	4,876	6,899	12,670	-	-	332	-
Deseronto	10,574	598	-	7,216	2,295	10,109	5,751	-	6,521	-
Eganville	5,272	2,003	298	3,660	3,943	9,904	-	-	-	-
Ernestown (Odessa)	3,032	118	435	6,531	8,653	15,737	-	-	585	-
Frankford	2,680	1,626	2,885	8,467	13,155	26,133	-	-	1,746	-
Hawkesbury	3,366	3,504	11,261	59,893	25,228	99,886	-	-	3,202	-
L'Orignal	2,511	1,601	371	4,980	2,398	9,350	82	-	-	-
Marmora	2,465	644	2,602	5,933	1,773	10,952	-	-	671	-
Merrickville	2,673	167	1,617	5,136	2,921	9,841	604	-	15	-
Pittsburgh (Cana)	239	-	-	1,215	1,689	2,904	-	-	-	-
Region 5 - Northeast										
Black River-Matheson	1,419	716	321	10,554	3,564	15,155	355	-	-	-
Haileybury	5,310	-	2,026	9,685	928	12,639	-	-	1,282	-
Iroquois Falls	12,092	884	-	17,422	2,013	20,319	-	-	1,113	-
Kirkland Lake	45,348	1,288	2,994	36,409	8,675	49,366	-	-	57,470	-
Latchford	153	-	658	3,948	-	4,606	2,888	-	-	-
Moosonee (North)	3,049	205	1,744	9,582	6,933	18,464	2,925	-	-	-
Moosonee (Old Townsite)	605	551	900	4,088	1,872	7,411	-	-	-	-
Rayside-Balfour (Azilda)	4,701	448	972	17,866	3,803	23,089	-	-	3,982	-
Rayside-Balfour (Chelmsford)	7,793	2,977	1,022	18,230	2,778	25,007	-	-	-	-
Smooth Rock Falls	2,550	7,271	(84)	10,891	612	18,690	-	-	670	-
Timmins (Whitney-Tisdale)	20,784	2,827	1,953	36,627	9,405	50,812	-	-	-	-
Wicksteed (Hornepayne)	10,430	3,576	-	17,999	4,978	26,553	-	-	-	-
Region 6 - Northwest										
Ear Falls	3,523	5,192	1,634	14,254	3,512	24,592	-	-	-	-
Geraldton	7,404	270	-	14,335	5,905	20,510	100	-	2,270	-
Ignace	1,557	615	6,120	8,804	2,708	18,247	-	-	-	-
Longlac	9,112	2,382	1,357	11,099	2,836	17,674	-	-	317	-
Pickle Lake	15,410	1,754	513	4,529	-	18,719	-	-	-	-
Red Lake	16,073	1,145	2,309	10,318	5,184	18,956	-	-	-	-
Schreiber	6,960	153	450	8,481	1,750	10,834	-	-	1,206	-

OPERATING EXPENDITURES ---- MECHANICAL PLANTS

PROJECT	GRAND TOTAL	REGULAR STAFF	UNCLASS. STAFF	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	SLUDGE HAULAGE	REPAIRS AND MAINT'CE	OTHER SERVICES
HIGH RATE ACTIVATED SLUDGE										
Region 1 - Southwest										
Meaford	98,710	-	-	43,471	8,910	2,910	594	3,053	1,691	(863)
Region 2 - West Central										
Cambridge (Hespeler)	128,531	-	-	47,834	8,651	2,318	328	15,319	1,300	1,303
Region 3 - Central										
Bradford	113,422	-	-	43,915	6,551	3,082	278	10,058	2,185	920
Region 4 - Southeast										
Carleton Place	65,528	-	-	26,759	3,792	58	784	273	1,243	921
Region 5 - Northeast										
Sudbury	756,610	-	-	228,834	45,083	3,807	12,382	74,017	5,850	21,746
OXIDATION DITCH										
Region 1 - Southwestern										
Paisley	36,064	-	-	21,381	3,134	1,466	133	588	960	288
Southampton	83,905	-	-	38,949	9,045	1,403	240	3,636	65	(1,538)
Region 2 - West Central										
Grand Valley	32,554	-	-	13,505	3,457	1,730	126	4,920	26	2,358
Haldimand (Cayuga)	33,787	-	-	10,315	3,071	2,239	116	826	63	3,417
Woolwich (St. Jacobs)	35,796	-	-	10,052	1,239	298	169	3,193	4,031	1,344
Region 3 - Central										
Fenelon Falls	50,855	-	-	16,863	2,718	992	221	7,024	2,384	-
Hastings	75,683	-	-	29,296	5,946	2,254	200	5,880	2,521	1,945
Norwood	52,508	-	-	23,946	4,431	1,964	162	2,103	204	1,044
Region 5 - Northeastern										
Nickel Centre (Coniston)	46,566	-	-	27,528	3,039	1,569	1,272	282	590	1,576
TERTIARY TREATMENT										
Region 1 - Southwest										
Stratford	299,234	-	-	123,661	24,571	4,221	824	36,580	3,410	1,400
Region 2 - West Central										
Orangeville	151,793	-	-	55,857	17,522	260	545	19,278	196	225
Simcoe	271,730	-	-	98,034	14,570	452	360	19,750	7,569	2,034

OPERATING EXPENDITURES ------- MECHANICAL PLANTS

PROJECT	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TR'S'CT'NS	INTER MINISTRY EXP. REFUNDS
HIGH RATE ACTIVATED SLUDGE										
Region 1 - Southwest										
Hesford	4,475	8,483	1,162	21,362	6,403	37,410	1,534	-	-	-
Region 2 - West Central										
Cambridge (Hespeler)	18,250	4,586	8,981	32,201	5,710	51,478	-	-	-	-
Region 3 - Central										
Bradford	13,441	2,105	12,957	26,843	4,528	46,433	-	-	-	-
Region 4 - Southeast										
Carleton Place	3,221	438	5,731	18,394	5,871	30,434	-	-	1,264	-
Region 5 - Northeast										
Sudbury	113,995	11,599	31,035	300,780	21,427	364,841	50	-	-	-
OXIDATION DITCH										
Region - Southwestern										
Paisley	1,969	408	-	4,639	2,970	8,017	-	-	97	-
Southampton	2,403	12,818	1,160	11,529	5,981	31,488	-	-	617	-
Region 2 - West Central										
Grand Valley	7,430	190	104	2,555	3,083	5,932	111	-	389	-
Haldimand (Cayuga)	4,422	4,104	1,589	5,075	2,972	13,740	-	-	-	-
Woolwich (St. Jacobs)	8,737	506	6,011	5,101	3,852	15,470	-	-	-	-
Region 3 - Central										
Fenelon Falls	12,846	2,514	2,146	5,592	6,466	16,718	-	-	718	-
Hastings	1,045	10,922	3,634	5,042	7,274	26,872	-	-	769	-
Norwood	3,513	5,250	2,567	4,247	5,951	18,015	-	-	639	-
Region 5 - Northeastern										
Nickel Centre (Coniston)	3,720	39	749	8,137	1,270	10,195	-	-	515	-
TERTIARY TREATMENT										
Region 1 - Southwest										
Stratford	42,214	1,313	40,563	41,991	7,409	91,276	-	-	13,291	-
Region 2 - West Central										
Orangeville	20,244	4,391	23,248	25,902	3,249	56,790	-	-	1,120	-
Simcoe	29,713	8,855	27,125	66,653	17,622	120,255	-	-	8,706	

OPERATING EXPENDITURES -------- LAGOONS

[illegible]	[illegible]	REGULAR STAFF	UNCLASS STAFF	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	SLUDGE HAULAGE	REPAIRS AND MAINT'CE	OTHER SERVICES
WASTE STABILIZATION PONDS										
Region 1 - Southwest										
Aylmer	40,523	-	-	12,256	-	2,941	260	70	-	2,302
Belmont	17,456	-	-	9,270	-	1,753	62	70	241	1,084
Chesley	1,922	-	-	228	-	8	93	-	-	171
Dover (Mitchell's Bay)	3,263	-	-	635	-	1	6	-	-	-
Dundalk	9,883	-	-	745	5	301	9	-	-	7,277
Dutton	14,761	-	-	7,168	219	336	43	-	-	386
East Zorra - (Tavistock)	10,984	-	-	1,490	-	440	92	-	15	610
Enniskillen (Oil City)	16,760	-	-	13,370	695	38	108	-	-	509
Essex N. E.	43,083	-	-	14,850	351	1,339	109	-	290	7,744
Forest	6,055	-	-	4,598	157	19	61	-	-	467
Glencoe	12,510	-	-	6,196	189	70	82	-	-	822
Gosfield N. (Cottam)	8,522	-	-	4,251	9	554	20	-	-	1,617
Harrow	14,314	-	-	6,320	-	755	28	-	-	4,004
Hensall	5,748	-	-	711	-	142	4	-	-	327
Lucan	6,829	-	-	-	-	-	21	-	1,640	3,637
Milverton	17,281	-	-	6,581	186	189	88	-	-	3,345
Mitchell	36,118	-	-	9,870	11	685	113	-	25	600
Moore (Brigden)	4,826	-	-	3,288	-	484	16	-	-	636
Norwich	22,219	-	-	8,178	148	524	51	-	-	4,662
Oil Springs	934	-	-	-	-	-	1	-	-	-
Port Stanley	33,670	-	-	14,518	-	2,755	242	70	2,323	1,649
Raleigh & Tilbury E.(Merlin)	7,713	-	-	6,637	233	-	35	-	-	-
Ridgetown	12,359	-	-	1,319	-	651	57	-	4,209	9,737
Rodney	10,340	-	-	6,137	194	460	39	-	120	1,815
Sarnia (Bright's Grove)	20,596	-	-	9,035	-	901	70	-	1,199	1,480
Seaforth	19,138	-	-	7,765	216	701	51	-	74	2,116
Sombra (Port Lambton)										
Sombra (Port Sombra)	14,610	-	-	6,096	-	984	28	-	-	842
Tilbury N. (Stoney Point)	6,945	-	-	2,411	-	1,328	4	-	-	1,202
Tilbury W. (Comber)	15,438	-	-	6,631	-	625	43	-	-	549
Watford	6,547	-	-	4,295	143	-	53	-	-	195
West Lorne	18,291	-	-	6,969	232	371	49	-	-	6,152
Wiarton	15,032	-	-	5,409	-	259	133	-	1,430	2,360
Wingham	4,267	-	-	1,177	-	489	113	-	-	145
Zurich	3,251	-	-	882	-	195	2	-	-	33
Region 2 - West Central										
Arthur	19,030	-	-	6,833	619	696	39	-	-	2,372
Dunnville (Oswego Park)	1,620	-	-	342	102	376	4	-	-	200
Harriston	3,062	-	-	220	53	78	106	-	-	26
Hanticoke (Jarvis)	7,261	-	-	2,103	544	484	43	-	-	140
Norfolk (Port Rowan)	9,458	-	-	6,214	326	21	37	-	-	27
Shelburne	670	-	-	293	55	40	84	-	-	8
Wilmot (New Hamburg)	8,306	-	-	342	60	340	76	-	-	54
Region 3 - Central										
Beeton	9,660	-	-	3,606	1,082	627	24	-	-	843
Havelock	20,635	-	-	11,586	1,002	50	86	-	225	-
Lakefield	22,906	-	-	11,707	689	562	78	-	95	196
Omemee	22,346	-	-	11,151	636	397	80	-	65	5,103

OPERATING EXPENDITURES --------LAGOONS

PROJECT	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TR'S'CT'NS	INTER MINISTRY EXP. REFUNDS
WASTE STABILIZATION PONDS										
Region 1 - Southwest										
Aylmer	2,631	856	5,033	9,192	7,148	22,229	425	-	41	-
Belmont	1,457	2,122	-	713	1,927	4,762	-	-	214	-
Chesley	264	-	-	1,307	115	1,422	-	-	-	-
Dover (Mitchell's Bay)	6	1,629	-	618	374	2,621	-	-	-	-
Dundalk	7,286	-	1,269	-	277	1,546	-	-	-	-
Dutton	429	1,903	1,324	1,347	1,928	6,502	-	-	107	-
East Zorra - (Tavistock)	717	-	3,705	-	4,632	8,337	-	-	-	-
Enniskillen (Oil City)	617	570	355	330	194	1,449	-	-	591	-
Essex N. E.	8,143	1,090	4,651	2,277	8,099	16,117	617	-	1,666	-
Forest	528	1	-	577	171	749	-	-	4	-
Glencoe	904	-	-	876	3,850	4,726	-	-	425	-
Gosfield N. (Cottam)	1,637	300	-	564	1,015	1,879	-	-	192	-
Harrow	4,032	-	-	1,128	813	1,941	-	-	1,266	-
Hensall	331	-	-	1,637	789	2,426	620	-	1,518	-
Lucan	5,298	-	-	909	622	1,531	-	-	-	-
Milverton	3,433	55	4,496	-	1,432	5,983	443	-	466	-
Mitchell	738	1,047	12,831	3,514	6,515	23,907	425	-	482	-
Moore (Brigden)	652	-	-	108	175	283	11	-	108	-
Norwich	4,713	2,928	-	1,655	3,675	8,258	257	-	141	-
Oil Springs	1	166	-	527	85	778	-	-	155	-
Port Stanley	4,284	1,368	-	5,200	3,741	10,309	1,250	-	554	-
Raleigh & Tilbury E.(Merlin)	35	-	-	473	169	642	-	-	166	-
Ridgetown	14,003	-	1,407	1,697	1,996	5,100	-	-	1,286	-
Rodney	1,974	377	-	850	268	1,495	-	-	80	-
Sarnia (Bright's Grove)	2,749	2,929	-	3,854	554	7,137	608	-	166	-
Seaforth	2,241	161	2,701	2,781	2,188	7,831	253	-	131	-
Sombra (Port Sombra)	870	-	-	4,931	170	5,101	250	-	1,309	-
Tilbury N. (Stoney Point)	1,206	-	-	1,801	199	2,000	-	-	-	-
Tilbury W. (Comber)	592	4,574	-	502	2,281	7,357	115	-	118	-
Watford	248	230	-	1,105	171	1,506	-	-	355	-
West Lorne	6,201	-	2,695	490	1,333	4,518	-	-	-	-
Wiarton	3,923	501	435	4,221	173	5,330	-	-	111	-
Wingham	258	202	-	1,614	527	2,343	-	-	-	-
Zurich	35	-	-	727	1,279	2,006	133	-	-	-
Region 2 - West Central										
Arthur	2,411	2,131	3,152	1,553	1,596	8,432	-	-	39	-
Dunnville (Oswego Park)	204	-	-	534	62	596	-	-	-	-
Harriston	132	821	-	1,638	120	2,579	-	-	-	-
Nanticoke (Jarvis)	183	169	2,959	560	259	3,947	-	-	-	-
Norfolk (Port Rowan)	64	49	1,244	412	427	2,132	-	-	701	-
Shelburne	92	-	-	-	190	-	-	-	-	-
Wilmot (New Hamburg)	130	569	3,176	3,337	352	7,434	-	-	-	-
Region 3 - Central										
Beeton	867	327	38	1,295	1,717	3,377	-	-	101	-
Havelock	311	807	2,678	1,340	2,631	7,465	150	-	80	-
Lakefield	369	479	3,088	3,086	2,044	8,697	-	-	882	-
Omemee	5,248	723	-	2,759	1,203	4,685	144	-	115	-

OPERATING EXPENDITURES -------- LAGOONS

PROJECT	GRAND TOTAL	REGULAR STAFF	UNCLASS STAFF	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	SLUDGE HAULAGE	REPAIRS AND MAINT'CE	OTHER SERVICES
Region 4 - Southeast										
Alfred	12,576	-	-	5,844	1,617	1,105	49	-	-	731
Casselman	14,317	-	-	5,371	1,245	192	54	-	-	795
Chesterville	19,969	-	-	14,318	(1,709)	1,061	55	-	14	1,166
Goulbourn (Richmond)	24,348	-	-	8,036	1,630	2,144	63	-	456	3,446
Lancaster	9,275	-	-	2,940	849	(193)	161	-	941	476
Leeds & Lansdowne	14,832	-	-	7,519	1,707	258	493	-	-	1,136
Madoc	6,789	-	-	927	305	279	21	-	-	-
Plantagenet	17,286	-	-	7,444	1,823	1,669	60	-	-	2,505
Rockland	10,740	-	-	5,034	1,294	579	122	-	533	773
Russell	20,014	-	-	6,414	1,589	2,260	47	-	-	303
St. Isidore de Prescott	14,347	-	-	4,929	1,249	343	24	-	-	2,115
Stirling										
Tweed	12,858	-	-	1,560	420	1,340	18	-	-	2,116
Vankleek Hill	15,218	-	-	6,947	1,041	1,255	73	-	-	503
Westport	15,475	-	-	10,433	(732)	181	245	-	1,202	220
Winchester	21,197	-	-	8,086	2,370	896	286	-	558	1,052
Region 5 - Northeast										
Assiginack (Manitowaning)	11,658	-	-	4,752	154	539	162	-	-	86
Black R.-Matheson(Ramore)	3,846	-	-	2,210	300	205	24	-	-	-
Black R.-Matheson (V.G.)	661	-	-	507	70	66	10	-	-	5
Bruce Mines	10,148	3,153	-	3,153	126	810	203	-	2,921	20
Burk's Falls	12,391	-	-	5,952	238	181	66	-	862	20
Caldwell (Verner)	16,625	-	-	8,991	1,824	675	258	-	-	-
Englehart	5,544	-	-	3,996	130	67	46	-	-	-
Fauquier (Moonbeam)	4,523	-	-	2,525	315	271	23	-	749	514
Haileybury (N. Cobalt)	6,994	-	-	3,857	489	-	-	-	314	-
Hearst	19,058	-	-	6,791	213	889	103	-	624	568
Little Current	1,259	-	-	151	46	90	50	-	-	-
Mattawa	3,119	-	-	-	-	-	117	-	-	-
Michipicoten (Wawa)	269	-	-	-	-	-	45	-	33	-
New Liskeard	887	-	-	50	-	-	351	-	-	-
N. Himsworth (Callander)	11,748	-	-	5,773	268	238	1	-	200	17
Owens W.I. (Val Rita)	7,154	-	4,038	4,038	136	59	16	-	-	-
Powassan	1,964	-	-	243	45	31	31	-	235	-
Ratter & Dunnet (Warrent)	5,230	-	-	3,896	223	-	27	-	-	10
Shackleton & Machin (Fauquier)	12,221	-	-	8,073	1,000	-	16	-	-	40
Sundridge	11,487	-	-	5,301	340	433	49	-	-	820
Webbwood	5,266	4,265	-	4,265	141	83	27	-	-	-
Region 6 - Northwest										
Atwood (Rainy River)	9,241	-	4,263	4,263	169	558	17	-	720	363
Emo	7,296	1,631	1,593	3,224	-	99	37	-	26	1,239
AERATED LAGOONS										
Region 1 - Southwest										
Durham	12,066	-	-	-	-	-	114	-	-	5,452
Kincardine	44,863	-	-	19,122	2,717	2,113	1,110	-	1,591	2,440
Listowel	65,149	-	-	19,989	3,122	1,642	262	-	427	(603)
Thornbury	41,999	-	-	13,300	-	781	109	-	1,106	4,176
Region 2 - West Central										
Hanticoke (Waterford)	35,623	-	-	7,359	2,137	2,581	50	-	-	5,190
Region 4 - Southeast										
Alexandria	21,926	-	-	4,660	1,214	1,070	245	-	-	6,853
Almonte	19,196	-	-	7,973	2,066	1,750	78	-	537	584

OPERATING EXPENDITURES --------LAGOONS

PROJECT	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TR'S'CT'NS	INTER MINISTRY EXP. REFUNDS
Region 4 - Southeast										
Alfred	780	-	410	2,023	719	3,152	-	-	78	-
Casselman	849	581	-	1,440	4,460	6,484			176	-
Chesterville	1,235	9	-	1,366	3,228	4,603	451		10	-
Goulbourn (Richmond)	3,965	-	1,426	4,950	1,757	8,133	-	-	440	-
Lancaster	1,578	-	-	1,353	1,956	3,309	-	-	792	-
Leeds & Lansdowne	1,629	-	-	1,819	1,705	3,596	-	-	123	-
Madoc	71	1,182	496	113	2,766	5,257	-	-	-	-
Plantagenet	2,565	-	-	1,449	2,336	3,785	-	-	-	-
Rockland	1,428	791	-	-	1,332	2,123	217	-	65	-
Russell	350	1,692	-	1,065	6,644	9,401	-	-	-	-
St. Isidore de Prescott	2,139	-	-	1,109	4,125	5,234	453	-	-	-
Tweed	2,134	-	-	2,683	4,711	7,394	-	-	,10	-
Vankleek Hill	576	150	-	2,639	2,442	5,231	26	-	142	-
Westport	1,667	-	2,533	934	372	3,939	-	-	87	-
Winchester	1,896	-	62	934	6,953	7,949	-	-	-	-
Region 5 - Northeast										
Assiginack (Manitowaning)	248	1,622	-	1,349	2,855	5,826	-	-	139	-
Black R.-Matheson(Ramore)	24	-	-	670	437	1,107	-	-	-	-
Black R.-Matheson (V.G.)	15	-	-	-	3	3	-	-	-	-
Bruce Mines	3,144	286	257	1,881	366	2,790	-	-	125	-
Burk's Falls	948	2,396	-	2,182	494	5,072	-	-	-	-
Caldwell (Verner)	258	-	-	3,321	1,293	4,614	-	-	263	-
Englehart	46	-	-	1,236	69	1,305	-	-	-	-
Fauquier (Moonbeam)	1,286	343	-	529	(746)	126	-	-	-	-
Haileybury (N. Cobalt)	314	-	-	1,797	347	2,144	-	-	190	-
Hearst	1,295	803	-	7,639	829	9,271	599	-	-	-
Little Current	50	-	-	916	6	922	-	-	29	-
Mattawa	117	-	-	2,961	12	2,973	-	-	-	-
Michipicoten (Wawa)	78	56	-	-	135	191	-	-	-	-
New Liskeard	351	-	-	283	203	486	-	-	-	-
N. Himsworth (Callander)	218	-	164	3,137	1,950	5,251	-	-	-	-
Owens W.I. (Val Rita)	16	2,760	-	128	8	2,896	9	-	-	-
Powassan	266	278	-	938	163	1,379	-	-	-	-
Ratter & Dunnet (Warrent)	37	-	-	891	107	998	-	-	76	-
Shackleton & Machin (Fauquier)	56	1,485	-	1,477	121	3,083	9	-	-	-
Sundridge	869	12	-	1,867	2,660	4,539	-	-	5	-
Webbwood	27	30	-	609	54	693	-	-	57	-
Region 6 - Northwest										
Atwood (Rainy River)	1,100	64	-	1,418	-	2,034	1,117	-	-	-
Emo	1,317	184	11	4,864	-	2,656	-	-	-	-
AERATED LAGOONS										
Region 1 - Southwest										
Durham	5,566	4	-	4,257	2,212	6,473	-	-	27	-
Kincardine	5,141	1,309	296	11,158	3,007	15,770	-	-	-	-
Listowel	86	6,394	8,602	15,567	8,883	39,446	-	-	864	-
Thornbury	5,391	8,670	88	11,372	2,060	22,190	7	-	330	-
Region 2 - West Central										
Nanticoke (Waterford)	5,240	2,705	4,307	7,664	3,588	18,264	-	-	42	-
Region 4 - Southeast										
Alexandria	7,098	426	-	10,631	(3,173)	7,884	-	-	-	-
Almonte	1,199	-	-	4,455	1,613	6,068	140	-	-	-

PROJECT REPORTS

The projects are divided into two major sections - "mechanical sewage treatment plants", and "waste stabilization ponds". The latter refers to all lagoon type systems and they appear at the end of this "Operating Summary".

MECHANICAL SEWAGE TREATMENT PLANTS

The reports for each plant contains three sections, which are, the design details, the graphs and a performance report.

The design details are given in metric and in imperial units and for easier comprehension of the plant processes, a flow schematic is provided.

The yearly average concentrations for influent and effluent values for BOD, SS, and total phosphorus are plotted on the graphs. A graph is also utilized to demonstrate the relationship between the average daily flow and design capacity over the years.

Finally, the plant performance report is included. Shown in this report, are the monthly flow values for the plant. Also, the monthly influent and effluent concentrations for BOD, SS, and total phosphorus are given. The reductions for these parameters are shown as a percentage and in thousands (1000) of kilograms. Displayed at the bottom of this report are yearly totals, averages, maximums and number of samples.

WASTE STABILIZATION PONDS (LAGOONS)

Design details and a simple drawing is provided for the waste stabilization ponds.

A project performance report is included which shows monthly influent and effluent values for flow, BOD, SS and total phosphorus. The reductions for these parameters are shown as a percentage and in thousands (1000) of kilograms. Also provided, are the yearly totals, averages, maximums and the number of samples.

PRIMARY TREATMENT PLANTS

Ministry of the Environment
Ontario

Southwestern Region

①

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

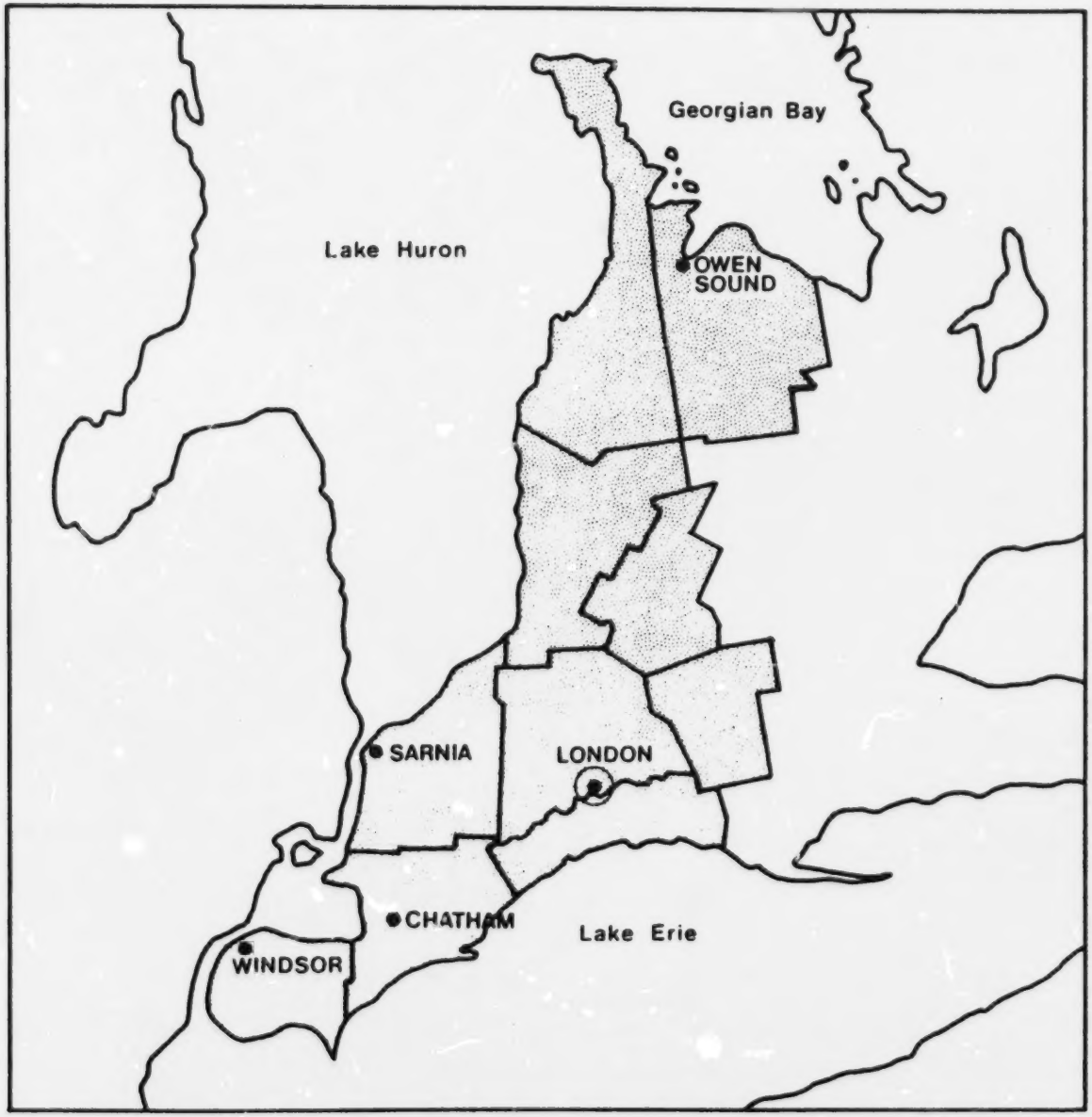
Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Southwestern Region

1

Ontario Ministry of the Environment



DESIGN DATA - METRIC

PROJECT City of Owen Sound WPCP

PROJECT NO. 2-0069-60

TREATMENT Primary

DESIGN FLOW 24.55 $10^3 m^3/d$

DESIGN POPULATION 25,000

BOD - Raw Sewage 180 mg/l
Removal 40%

SS - Raw Sewage 200 mg/l
- Removal 65%

SEWAGE PUMPING STATION

Screening

- 44.45mm spacing

Pumps

Type: Worthington
Size: Three 238.45 l/s at 10.06m
(One diesel standby)

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C 914mm

Grit Removal

Type: Aerated
Size: One 5.6m x 4.0m x 3.7m
Volume: 81.83m^3
Retention: 8.6 min

Pre-aeration Tank

Size: One 7.2m x 4.0m x 3.7m
Volume: 106.37 m^3
Retention: 11.2 min.

Air Supply

Type: Sutorbilt
Size: Two 170 l/s at 41 kPa

Primary Sedimentation

Type: Rex Linkbelt
Size: Two 23.8m x 9.8m x 3.81m
Volume: 1763.84 m^3

OWEN SOUND

Retention: 3.11 hr.
Loading: Surface, 29.33 $m^3/m^2 \cdot d$
Weir, 403.81 $m^3/m \cdot d$

CHLORINATION

Type: W & T
Size: One 907.2 kg/d

Chlorine Contact Chamber

Size: One 9.4m x 4.3m x 2.4m
Volume: 986.48m^3
Retention: 11.2 min

OUTFALL

- 252m to Owen Sound

SLUDGE HANDLING

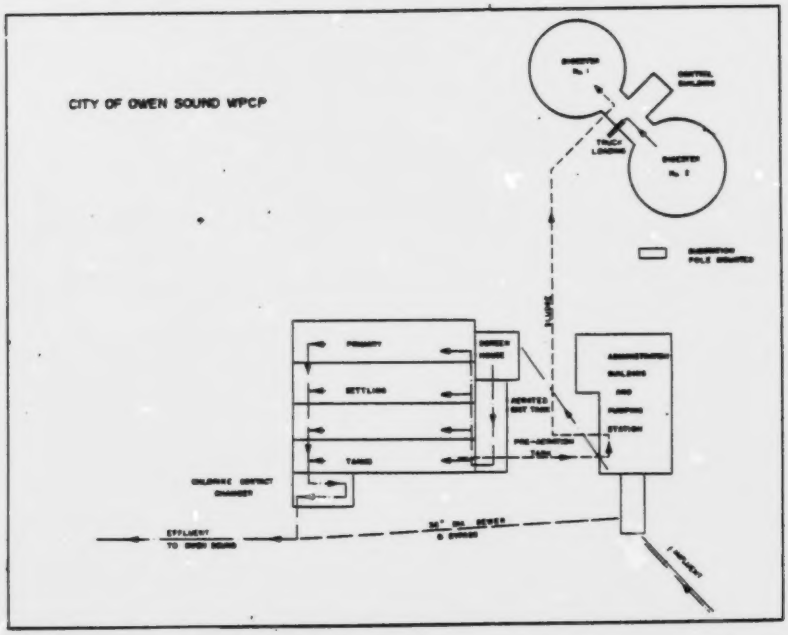
Digestion System - Two-stage

Primary --
Type: PFT with one Sutorbilt compressor
Size: One 12.2m dia x 7.62m swd
Volume: 0.891 $10^3 m^3$
Loading: 28.05 $kg/m^3 \cdot mon$

Secondary --
Size: One 12.2m dia x 7.47m swd
Volume: 872.26m^3
Total Loading: 19.18 $kg/m^3 \cdot d$

WEST SIDE PUMPING STATION

One - 296.44 l/s Chicago Pump
Two - 75.70 l/s Smart-Turner
Standby - Diesel generator



DESIGN DATA - IMPERIAL

PROJECT City of Owen Sound WPCP

PROJECT NO. 2-0069-60

TREATMENT Primary

DESIGN FLOW 5.4 mgd

DESIGN POPULATION 25,000

BOD - Raw Sewage 180 mg/l
- Removal 40%

SS - Raw Sewage 200 mg/l
- Removal 65%

SEWAGE PUMPING STATION

Screening

- 1 3/4" spacing

Pumps

Type: Worthington
Size: Three 3150 gpm @ 33'tdh
(One diesel standby)

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C (36")

Grit Removal

Type: Aerated
Size: One 18½x13x12'(18,000 gal)
Retention: 8.6 min

Pre-aeration Tank

Size: One 23'9"x13x12'
(23,400 gal)
Retention: 11.2 min

Air Supply

Type: Sutorbilt
Size: Two 400 scfm @ 6 psi

Primary Sedimentation

Type: Rex Linkbelt
Size: Two 78x32x12½'
(388,000 gal)

Retention: 3.11 hr
Loading:
Surface, 600 gal/ft^2/day
Weir, 8,260 gal/ft/day

CHLORINATION

Type: W & T
Size: One 2000 lb/day

Chlorine Contact Chamber

Size: One 31x14x8'(21,700 gal)
Retention: 11.2 min

OUTFALL - 828' to Owen Sound

SLUDGE HANDLING

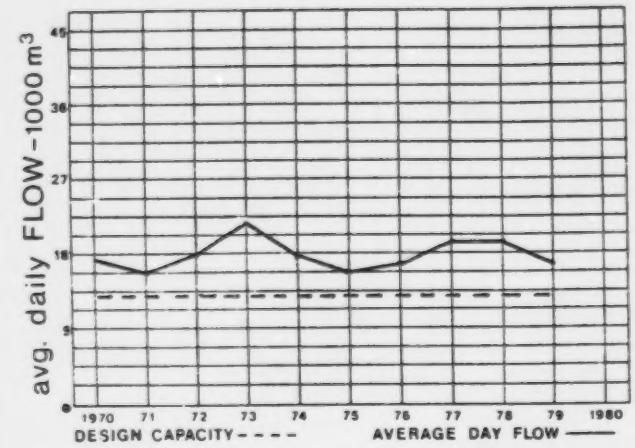
Digestion System - Two-stage

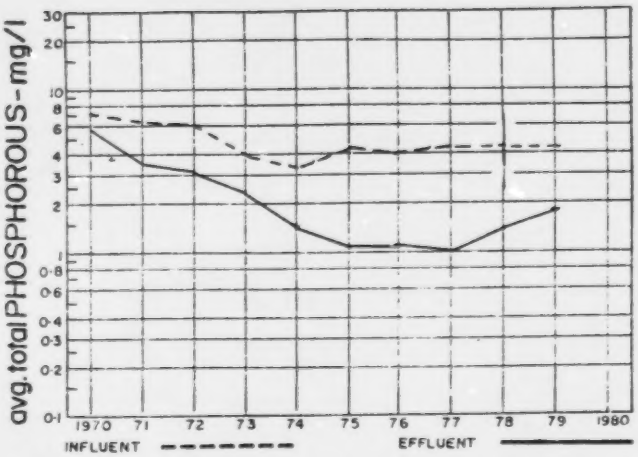
Primary --
Type: PFT with one Sutorbilt compressor
Size: One 40' diax25' swd
(31,400 cu ft or 0.196 mil gal)
Loading: 2.75 lb/cu ft/mo

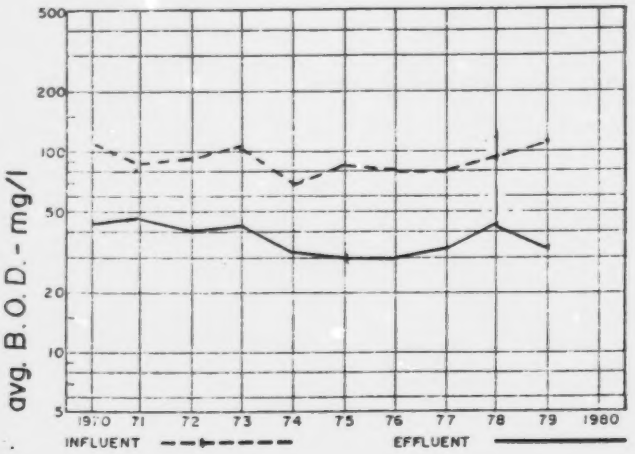
Secondary --
Size: One 40'diax24½' swd
(30,800 cu ft or 0.192 mil gal)
Total Loading:
1.88 lb/cu ft/mo

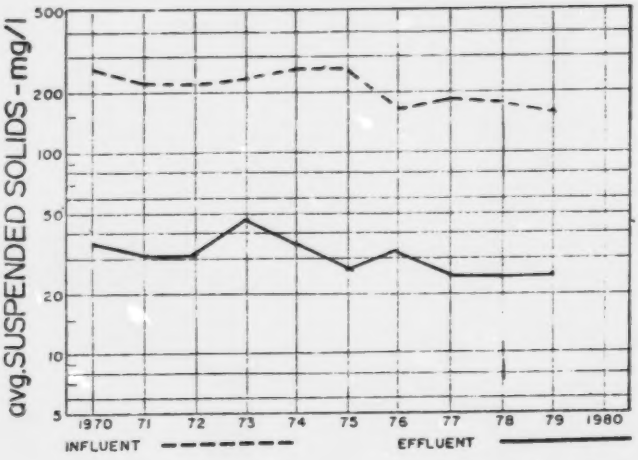
WEST SIDE PUMPING STATION

One - 3916 gpm Chicago Pump
Two - 1000 gpm Smart-Turner
Standby - Diesel generator









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000551 OWEN SOUND WPCP EXPAND TO 5.4 MG IN 78

MUNICIPALITY : OWEN SOUND
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 19,697
POPULATION SERVED : 19,180
PERCENT SERVED : 97.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 24,548 1000 M3 DESIGN BODS : 180.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	14.092	.454			74.0	32.0	56	.5	160.0	36.0	77	1.7	3.4	1.6	52	.025
FEB	217.299	7.761			125.0	59.0	52	14.3	144.0	22.0	84	26.5	4.2	2.3	45	.413
MAR	1150.138	37.101			470.0	36.0	92	499.1	197.0	19.8	89	203.8	8.7	1.0	88	8.856
APR	322.766	10.759			62.5	45.5	27	5.4	180.8	24.4	84	44.0	4.4	3.7	15	.229
MAY	526.881	16.996			*	*			*	*			*	*		
JUN	383.409	12.780			*	*			*	*			*	*		
JUL	462.282	14.912	30.200		65.0	46.5	28	8.5	137.0	25.5	81	51.5	3.9	1.6	59	1.072
AUG	636.900	21.230	34.600		66.0	17.1	74	31.1	116.5	30.4	73	54.8	3.9	1.2	66	1.662
SEP	363.179	12.105	11.400		117.0	27.0	76	32.6	197.8	27.0	86	62.0	4.5	1.1	75	1.253
OCT	520.244	16.782	60.000		71.3	28.0	60	22.5	132.5	26.3	80	55.2	3.5	1.5	57	1.077
NOV	560.521	18.684	27.500		77.0	27.7	63	27.6	175.6	23.2	86	85.4	3.6	1.9	47	.953
DEC	753.726	24.313	39.400		57.3	24.3	57	24.8	114.9	25.5	77	67.3	2.8	1.1	60	1.304
TOTAL	5911.437							666.9				652.5				16.844
AVERAGE		16.156			118.5	34.3	71		153.6	26.0	83		4.3	1.7	60	
MAXIMUM			60.000													
NO. OF SAMPLES					22	23			215	214			23	24		

DESIGN DATA - METRIC

PROJECT City of Owen Sound WPCP

PROJECT NO. 2-0069-60

TREATMENT Primary

DESIGN FLOW 24.55 $10^3 m^3/d$

DESIGN POPULATION 25,000

BOD - Raw Sewage 180 mg/l
Removal 40%

SS - Raw Sewage 200 mg/l
- Removal 65%

SEWAGE PUMPING STATION

Screening

- 44.45mm spacing

Pumps

Type: Worthington
Size: Three 238.45 l/s at 10.06m
(One diesel standby)

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C 914mm

Grit Removal

Type: Aerated
Size: One 5.6m x 4.0m x 3.7m
Volume: 81.83m^3
Retention: 8.6 min

Pre-aeration Tank

Size: One 7.2m x 4.0m x 3.7m
Volume: 106.37 m^3
Retention: 11.2 min.

Air Supply

Type: Sutorbilt
Size: Two 170 l/s at 41 kPa

Primary Sedimentation

Type: Rex Linkbelt
Size: Two 23.8m x 9.8m x 3.81m
Volume: 1763.84 m^3

OWEN SOUND

Retention: 3.11 hr.
Loading: Surface, 29.33 $m^3/m^2 \cdot d$
Weir, 403.81 $m^3/m \cdot d$

CHLORINATION

Type: W & T
Size: One 907.2 kg/d

Chlorine Contact Chamber

Size: One 9.4m x 4.3m x 2.4m
Volume: 986.48m^3
Retention: 11.2 min

OUTFALL

- 252m to Owen Sound

SLUDGE HANDLING

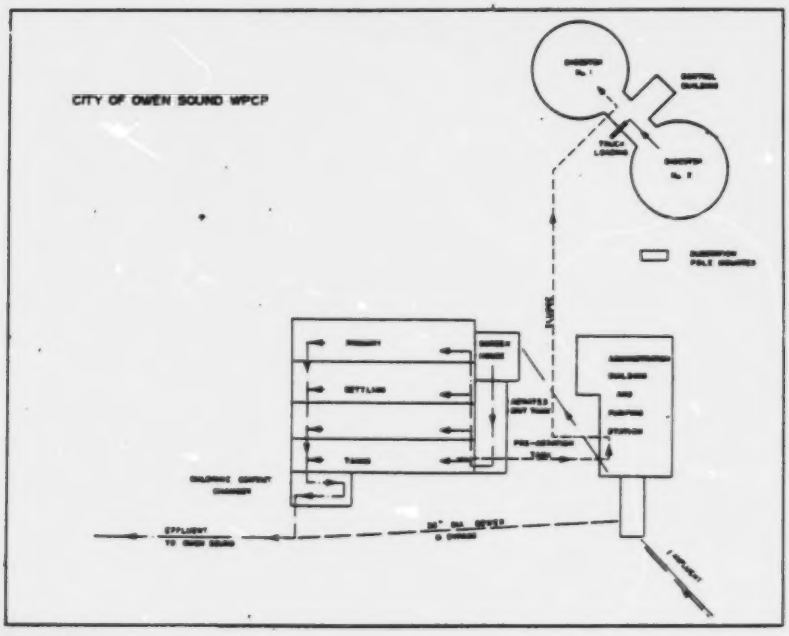
Digestion System - Two-stage

Primary --
Type: PFT with one Sutorbilt compressor
Size: One 12.2m dia x 7.62m swd
Volume: 0.891 $10^3 m^3$
Loading: 28.05 $kg/m^3 \cdot mon$

Secondary --
Size: One 12.2m dia x 7.47m swd
Volume: 872.26m^3
Total Loading: 19.18 $kg/m^3 \cdot d$

WEST SIDE PUMPING STATION

One - 296.44 l/s Chicago Pump
Two - 75.70 l/s Smart-Turner
Standby - Diesel generator



DESIGN DATA - IMPERIAL

PROJECT City of Owen Sound WPCP

PROJECT NO. 2-0069-60

TREATMENT Primary

DESIGN FLOW 5.4 mgd

DESIGN POPULATION 25,000

BOD - Raw Sewage 180 mg/l
- Removal 40%

SS - Raw Sewage 200 mg/l
- Removal 65%

SEWAGE PUMPING STATION

Screening

- 1 3/4" spacing

Pumps

Type: Worthington
Size: Three 3150 gpm @ 33'tdh
(One diesel standby)

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C (36")

Grit Removal

Type: Aerated
Size: One 18½x13x12' (18,000 gal)
Retention: 8.6 min

Pre-aeration Tank

Size: One 23'9"x13x12'
(23,400 gal)
Retention: 11.2 min

Air Supply

Type: Sutorbilt
Size: Two 408 scfm @ 6 psi

Primary Sedimentation

Type: Rex Linkbelt
Size: Two 78x32x12½'
(388,000 gal)

Retention: 3.11 hr
Loading:
Surface, 600 gal/ft^2/day
Weir, 8,260 gal/ft/day

CHLORINATION

Type: W & T
Size: One 2000 lb/day

Chlorine Contact Chamber

Size: One 31x14x8' (21,700 gal)
Retention: 11.2 min

OUTFALL - 828' to Owen Sound

SLUDGE HANDLING

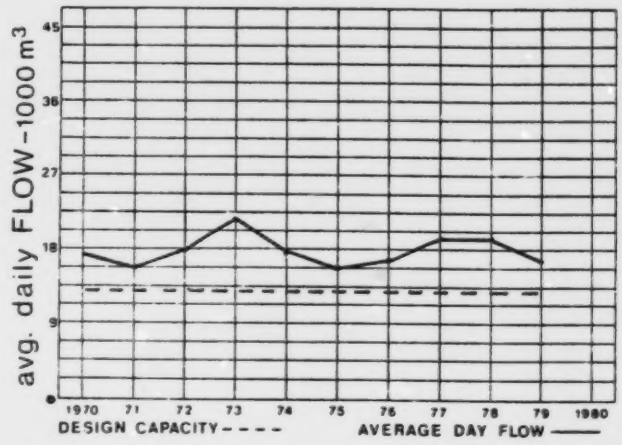
Digestion System - Two-stage

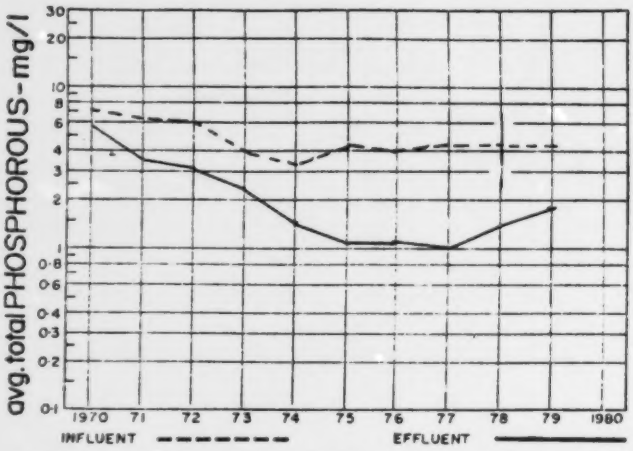
Primary --
Type: PFT with one Sutorbilt compressor
Size: One 40' diax25' swd
(31,400 cu ft or 0.196 mil gal)
Loading: 2.75 lb/cu ft/mo

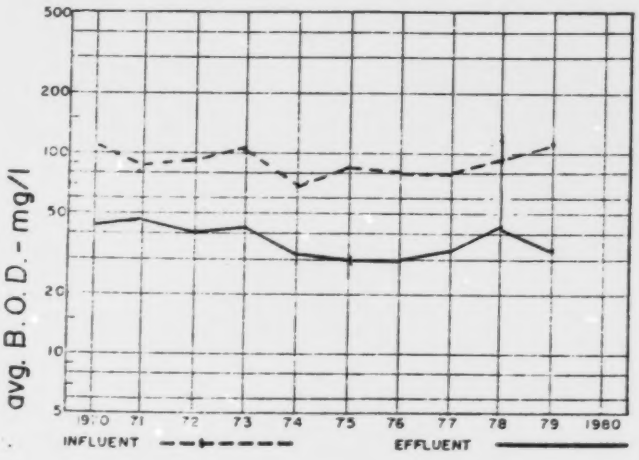
Secondary --
Size: One 40'diax24½' swd
(30,800 cu ft or 0.192 mil gal)
Total Loading:
1.88 lb/cu ft/mo

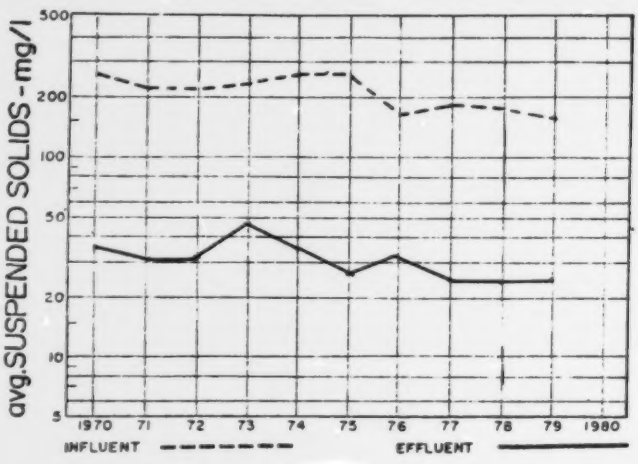
WEST SIDE PUMPING STATION

One - 3916 gpm Chicago Pump
Two - 1000 gpm Smart-Turner
Standby - Diesel generator









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110000551 OWEN SOUND WPCP EXPAND TO 5.4 MG IN 78

MUNICIPALITY : OWEN SOUND
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 19,697
POPULATION SERVED : 19,180
PERCENT SERVED : 97.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 24,548 1000 M3 DESIGN BOD5 : 180.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/78																
JAN	14.092	.454			74.0	32.0	56	.5	160.0	36.0	77	1.7	3.4	1.6	52	.025
FEB	217.299	7.761			125.0	59.0	52	14.3	144.0	22.0	84	26.5	4.2	2.3	45	.413
MAR	1150.138	37.101			470.0	36.0	92	499.1	197.0	19.8	89	203.8	8.7	1.0	88	8.856
APR	322.766	10.759			82.5	45.5	27	5.4	160.8	24.4	84	44.0	4.4	3.7	15	.229
MAY	526.881	16.996			*	*			*	*			*	*		
JUN	383.409	12.780			*	*			*	*			*	*		
JUL	462.282	14.912	30.200		65.0	46.5	28	8.5	137.0	25.5	81	51.5	3.9	1.6	59	1.072
AUG	636.900	21.230	34.600		66.0	17.1	74	31.1	116.5	30.4	73	54.8	3.9	1.2	68	1.682
SEP	363.179	12.105	11.400		117.0	27.0	76	32.6	197.8	27.0	86	62.0	4.5	1.1	75	1.283
OCT	520.244	16.782	60.000		71.3	28.0	60	22.5	132.5	26.3	80	55.2	3.5	1.5	57	1.077
NOV	560.521	18.684	27.500		77.0	27.7	63	27.6	175.6	23.2	86	85.4	3.6	1.9	47	.953
DEC	753.726	24.313	39.400		57.3	24.3	57	24.8	114.9	25.5	77	67.3	2.8	1.1	60	1.304
TOTAL	5911.437							666.9				652.5				16.844
AVERAGE		16.156			118.5	34.3	71		153.6	26.0	83		4.3	1.7	60	
MAXIMUM			60.000													
NO. OF SAMPLES					22	23			215	214			33	24		

DESIGN DATA - METRIC

POINT EDWARD

PROJECT Village of Point Edward WPCP

PROJECT NO. 2-0036-59

TREATMENT Primary

DESIGN FLOW 2.591 $10^3 m^3/d$

DESIGN POPULATION 5, 700

BOD - Raw Sewage 170 mg/l
- Removal 47%

SS - Raw Sewage 200 mg/l
- Removal 60%

RAW SEWAGE PUMPS

Type: Fairbanks-Morse
Size: Two 98.41 l/s at 10.7m TDH

PRIMARY TREATMENT

Screening

Type: Bar screens, manually cleaned
Size: Two 31.75mm spacing

Grit Removal

Type: Channels
Size: Two 4.9m x 0.5m x 0.6m
Retention: 0.88 min

Primary Sedimentation

Type: Dorr
Size: One 10.7m dia x 3.0m swd
Volume: 272.76m^3
Retention: 2.53 hr.
Loading: Surface 29.03 $m^3/m^2 \cdot d$
Weir 77.33 $m^3/m \cdot d$

CHLORINATION

Type: BIF
Size: One 90.72 kg/d
Chlorine Contact Chamber

Size: One 6.1m x 3.05m x 2.6m
Volume: 48.188 m^3
Retention: 27 min.

OUTFALL

to St. Clair River

SLUDGE HANDLING

Digestion System - Single-stage

Type: Dorr: 2 draft tube mixers
Size: One 10.7m x 6.1m swd
Volume: 541.78m^3
Loading: 10.91 kg/m^3 .d

PUMPING STATIONS
Storm Water

Type: Custom Built
Size: One 355.8 l/s at 6.1m TDH
Two 757.0 l/s at 6.1m TDH
with two 74.57kW diesel standbys

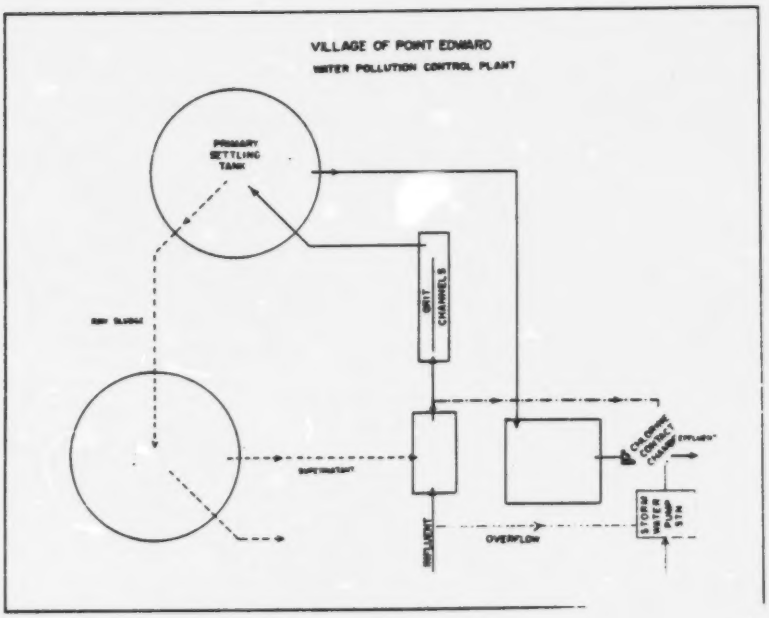
Helena Street

Type: Smith & Loveless
Package lift station
Size: Two 56.78 l/s at 12.2m TDH

Michigan Avenue

Type: Smith & Loveless
package lift station
Size: Two 37.85 l/s at 6.1m TDH

402 STATION (2-0193-63)
Type: Smith and Loveless
Package Lift Station
Size: Two 15.24 l/s at 7.0 TDH



PROJECT Village of Point Edward WPCP

PROJECT NO. 2-0036-59

TREATMENT Primary

DESIGN FLOW 0.57 mgd

DESIGN POPULATION 5,700

BOD - Raw Sewage 170 mg/l
- Removal 47%

SS - Raw Sewage 200 mg/l
- Removal 60%

RAW SEWAGE PUMPS

Type: Fairbanks-Morse
Size: Two 1300 lgpm @ 35' tdh

PRIMARY TREATMENT

Screening

Type: Bar screens, manually cleaned
Size: Two, 1¼" spacing

Grit Removal

Type: Channels
Size: Two 16 X 1.75 X 2'
Retention: 0.88 min

Primary Sedimentation

Type: Dorr
Size: One 35' dia x 10' swd
(60,000 Imp. gal)
Retention: 2.53 hr
Loading: Surface: 304 Imp. gal/ft²/day
Weir: 5,190 Imp. gal ft/day

CHLORINATION

Type: BIF
Size: One 200 lb/day
Chlorine Contact Chamber

Size: One 20 X 10 X 9½' (10,000 gal)
Retention: 27 min

OUTFALL

- to St. Clair River

SLUDGE HANDLING

Digestion System - Single-stage

Type: Dorr; 2 draft tube mixers
Size: One 35' dia x 20' swd (19,200 cu ft or 119,808 gal)
Loading: 1.07 lb/cu ft/mo

PUMPING STATIONS
Storm Water

Type: Custom Built
Size: One 4700 gpm @ 20' tdh
Two 10000 gpm @ 20' tdh
with two 100 hp diesel standbys

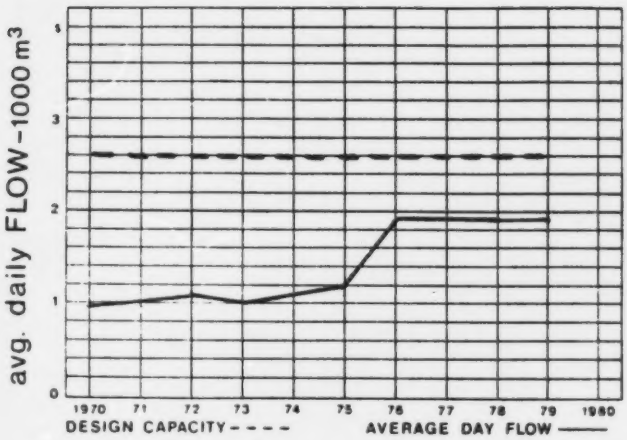
Helena Street

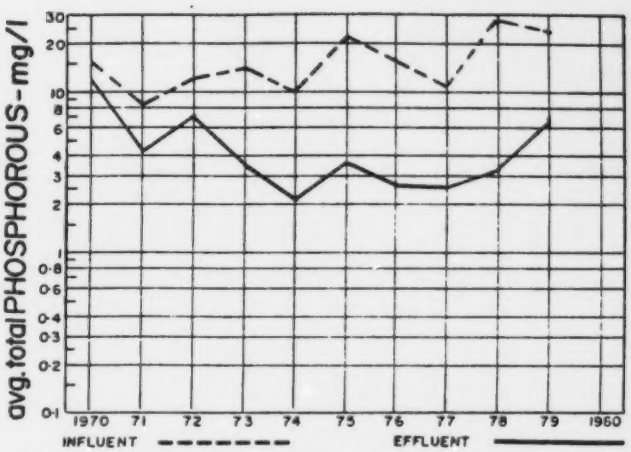
Type: Smith & Loveless
package lift station
Size: Two 750 gpm @ 40' tdh

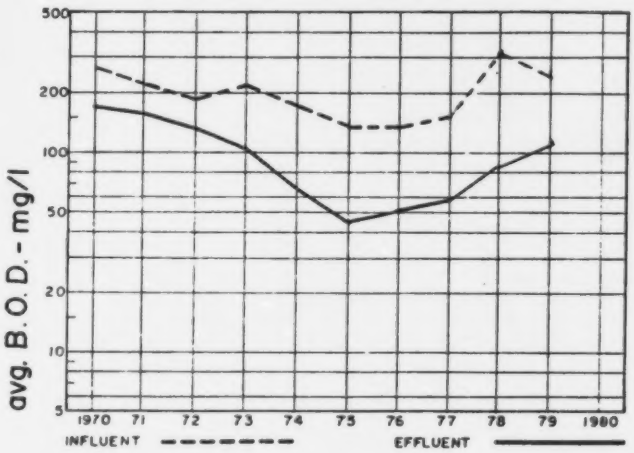
Michigan Avenue

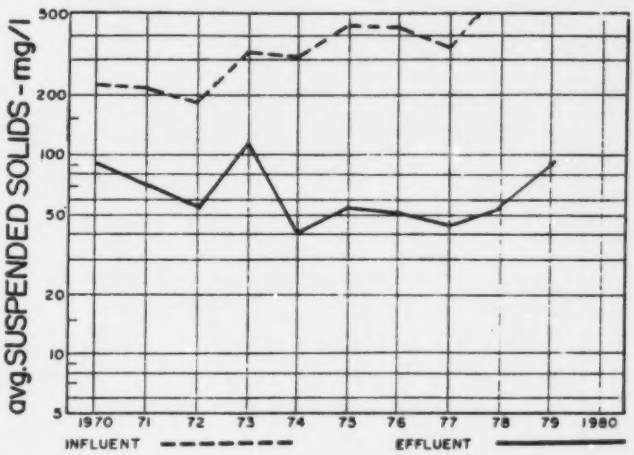
Type: Smith & Loveless
package lift station
Size: Two 500 gpm @ 20' tdh

402 STATION (2-0193-63)
Type: Smith and Loveless
Package Lift Station
Size: Two 175 gpm @ 23' tdh









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000597 POINT EDWARD WPCP

MUNICIPALITY : POINT EDWARD
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,417
POPULATION SERVED : 2,600
PERCENT SERVED : 107.5

* DATA NOT AVAILABLE

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.591 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	57.280	1.848	2.909	3.864	145.0	114.0	21	1.7	142.0	39.0	72	5.9	5.3	6.4	-	-
FEB	52.870	1.888	2.773	3.410	215.0	125.0	41	4.7	143.0	37.0	74	5.6	9.8	6.0	38	.201
MAR	59.734	1.927	2.500	3.182	160.0	67.0	58	5.5	129.0	39.0	69	5.3	7.1	2.7	61	.263
APR	65.720	2.190	3.310	4.000	230.0	155.0	32	4.9	190.0	177.0	6	.8	20.0	11.5	42	.559
MAY	67.790	2.190	2.880	3.400	600.0	88.0	85	34.7	*	61.0	94		64.0	3.2	95	4.122
JUN	58.650	1.960	2.230	2.820	490.0	185.0	62	17.8	*	241.0	82		56.0	14.8	73	2.418
JUL	67.250	2.160	2.870	4.540	*	*			*	*			*	*		
AUG	66.210	2.140	2.710	3.130	100.0	82.0	18	1.1	252.0	114.0	54	9.1	10.5	10.7	-	
SEP	57.950	1.930	2.220	2.820	*	*			*	*			*	*		
OCT	58.700	1.890	2.090	2.730	140.0	56.0	60	4.9	179.0	43.0	75	7.9	12.3	2.3	80	584
NOV	56.780	1.890	2.160	2.730	185.0	70.0	62	6.5	620.0	77.0	87	30.8	16.7	4.5	73	693
DEC	57.750	1.860	2.400	2.950	209.0	112.0	46	5.6	871.0	123.0	85	43.1	39.0	4.3	88	2.001
TOTAL	726.684							87.8				108.5				10.839
AVERAGE		1.989			247.4	105.4	57		315.0	95.1	70		24.0	6.8	72	
MAXIMUM			3.310	4.540												
NO. OF SAMPLES					11	11			11	11			11	11		

Ministry of the Environment
Ontario

West Central Region

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REGIONAL OFFICE
STONEY CREEK
140 Centennial Pkwy. N.
416-561-7410

DISTRICT OFFICES
Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

West Central Region ②

Ministry of the Environment
Ontario

DESIGN DATA - METRIC

NANTICOKE (PORT DOVER)

PROJECT: City of Nanticoke
Port Dover WPCP

PROJECT NO.: c-0115-62

TREATMENT: Primary

DESIGN FLOW: 4.091 x 10^3 m^3/c

DESIGN POPULATION: 5,300

BOD - Raw Sewage 210 mg/l
- Removal 30%

SS - Raw Sewage 296 mg/l
- Removal 60%

RAW SEWAGE PUMPS

Type: Worthington
Size: One 60.6 l/s @ 7.3m TDH
One 37.9 l/s @ 7.3m TDH
Two 132.5 l/s @ 7.3m TDH

PRIMARY TREATMENT

Grit Removal

Type: Aerated, mechanical grit collector (Rex Chainbelt)
Size: One 6.1m x 3.05m x 3.6m
Volume: 67.05m^3
Retention: 10 min.

Air Supply

Type: Roots-Connersville
Size: One 22.98 l/s
One 27.16 l/s

Primary Sedimentation

Type: Rex Chainbelt
Size: Three 22.86m x 4.6m x 2.4m
Volume: 763.73 m^3
Retention: 1.93 hr.
Loading: Surface, 30.31 m^3/m^2.d
Weir, 692.35 m^3/m.d

CHLORINATION

F & P automatic

Chlorine Contact Chamber

Size: One 6.5m x 5.5m x 2.0m
Volume: 72.51 m^3
Retention: 11 min.

OUTFALL

to Lake Erie

SLUDGE HANDLING

Aerated holding tank, one 6.1m x 4.6m x 2.5m (Avg)
Size: 69.67 m^3

Vacuum Filter

Type: Eimco (cloth)
Size: One 18.58 m^2

PUMPS -- TYPE and SIZE

#1 Pumping Station (custom-built)

Type: Worthington
Size: Three 132.5 l/s @ 20.1m TDH
(station has one Barminutor, Model C)

#2 Pumping Station (prefabricated)

Type: Fairbanks-Morse
Size: Two 21.5 l/s @ 14.6m TDH

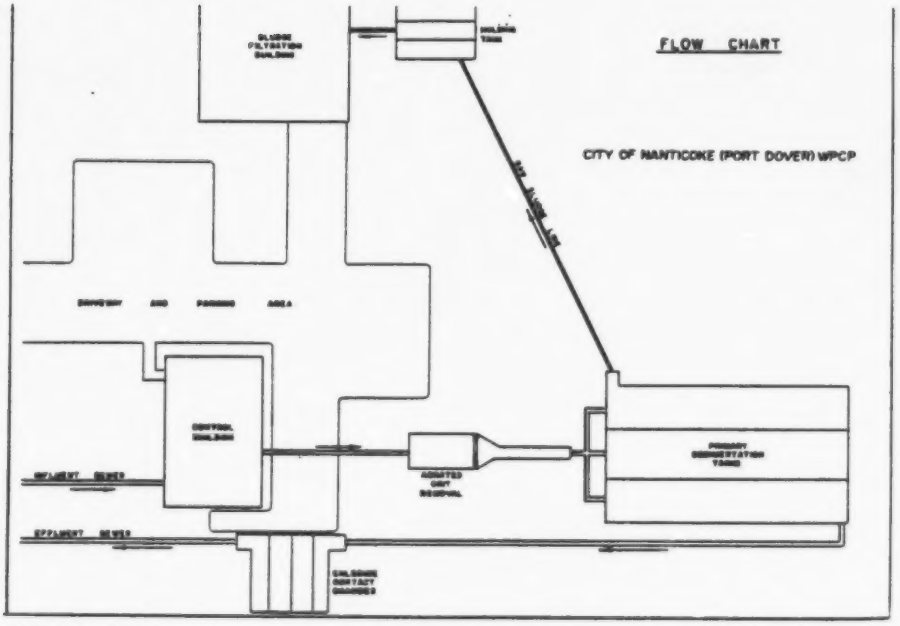
#3 Pumping Station (prefabricated)

Type: Fairbanks-Morse
Size: Two 15.7 l/s @ 19.8m TDH

#4 Pumping Station

Type: Flygt submersible
Size: Two 16.4 l/s @ 5.8m TDH

NOTE: Above pumping stations have overflows to Lynn River



DESIGN DATA - IMPERIAL

PROJECT NO. 3-0115-62

TREATMENT Primary

DESIGN FLOW 0.900 MIGD

DESIGN POPULATION 5,300

BOD - Raw Sewage 210 mg/l
- Removal 30%

SS - Raw Sewage 296 mg/l
- Removal 60%

RAW SEWAGE PUMPS

Type: Worthington
Size: One 800 gpm @ 24' tdh
One 500 gpm @ 24' tdh
Two 1750 gpm @ 25' tdh

PRIMARY TREATMENT

Grit Removal

Type: Aerated, mechanical grit collector (Rex Chainbelt)
Size: One 20' x 10' x 11.85'
(14,750 gal)
Retention: 10 min

Air Supply

Type: Roots-Connersville
Size: One 55 cfm
One 65 cfm

Primary Sedimentation

Type: Rex Chainbelt
Size: Three 75' x 15' x 8'
(168,000 gal)
Retention: 1.93 hr
Loading: Surface, 620 gal/ft^2/day
Weir, 46,500 gal/ft/day

CHLORINATION

F & P Automatic

Chlorine Contact Chamber

Size: One 21½' x 18' x 6½'
(15,950 gal)
Retention: 11 min

OUTFALL

to Lake Erie

SLUDGE HANDLING

Aerated holding tank, one
20' x 15' x 8.2' (avg)
Size: 2,480 ft^3 or 18,750 gal

Vacuum Filter

Type: Eimco (cloth)
Size: One 200 sq ft

PUMPS -- TYPE and SIZE

#1 Pumping Station (custom-built)

Type: Worthington
Size: Three 1750 gpm @ 66' tdh
(station has one Barminutor, Model C)

#2 Pumping Station (prefabricated)

Type: Fairbanks-Morse
Size: Two 417 gpm @ 48' tdh

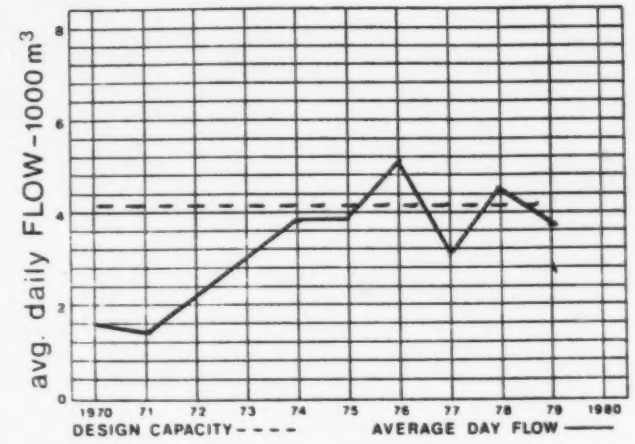
#3 Pumping Station (prefabricated)

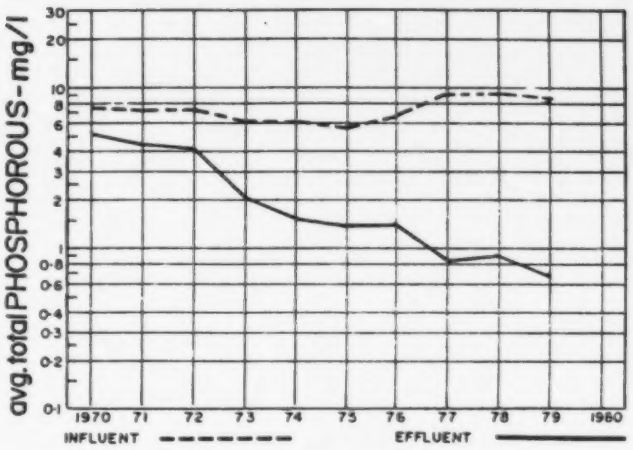
Type: Fairbanks-Morse
Size: Two 297 gpm @ 65' tdh

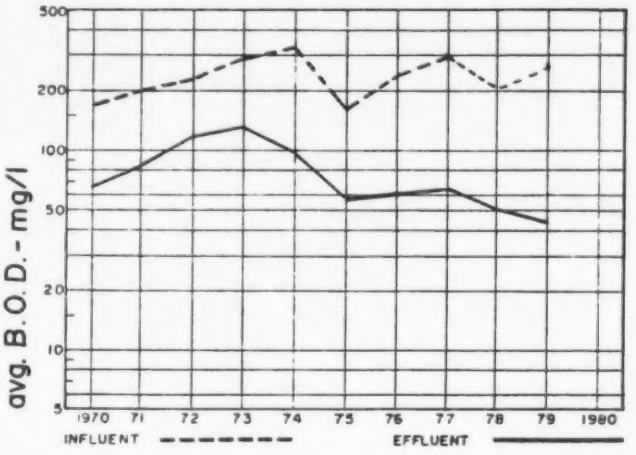
#4 Pumping Station

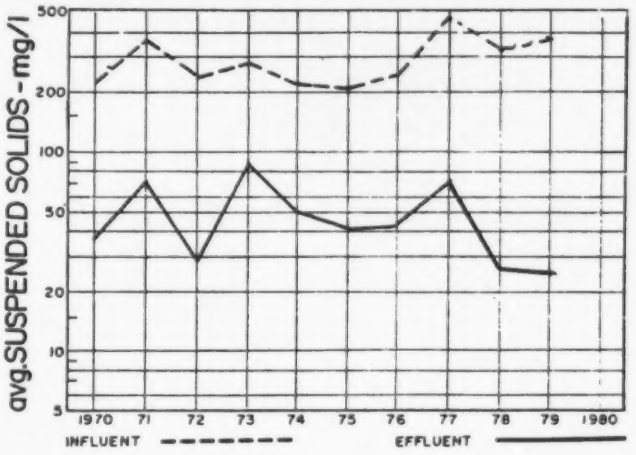
Type: Flygt submersible
Size: Two 217 gpm @ 19' tdh

NOTE: Above pumping stations have overflows to Lynn River









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000604 NANTICOKE (PORT DOVER)

MUNICIPALITY : NANTICOKE (PORT DOVER)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 18,829
POPULATION SERVED : 2,700
PERCENT SERVED : 14.3

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.091 1000 M3 DESIGN BODS : 210.0 MG/L DESIGN SUSP.SOLIDS : 288.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	168.000	5.400	10.800	20.500	76.0	27.0	64	8.2	117.0	25.0	78	15.4	4.1	.7	82	.571
FEB	118.855	3.834	8.542	12.729	104.0	28.4	72	8.9	188.0	30.5	89	19.9	5.2	.3	94	.582
MAR	184.481	5.951	9.683	14.547	840.0	19.0	97	151.4	147.9	30.0	79	21.7	24.6	.8	96	4.391
APR	190.300	6.343	11.550	18.100	131.0	49.5	62	15.5	139.5	32.0	77	20.4	4.8	1.2	73	.647
MAY	119.050	3.840	4.760	10.000	185.0	48.0	72	14.1	250.0	37.0	85	25.3	6.0	2.2	62	.445
JUN	103.090	3.436	5.000	13.636	177.5	79.5	55	10.1	258.5	38.5	84	22.4	7.7	1.1	84	.672
JUL	89.740	2.890	3.860	10.900	237.5	91.0	61	13.1	784.0	40.2	94	68.7	8.0	1.3	83	.801
AUG	88.140	2.843	3.630	14.000	375.0	26.0	93	30.7	379.0	17.0	95	31.9	9.5	.2	97	.820
SEP	78.970	2.630	6.800	20.500	368.0	91.0	75	21.8	369.0	26.0	92	27.0	3.0	.4	94	.672
OCT	79.350	2.559	3.280	11.000	220.0	56.0	74	13.0	199.0	22.0	88	14.0	7.4	.5	92	.544
NOV	94.510	3.150	5.380	10.900	160.0	17.9	88	13.4	268.0	7.7	97	24.4	6.0	.3	94	.537
DEC	109.100	3.519	17.600	15.900	330.0	8.0	97	35.1	270.0	8.5	96	28.5	7.6	.1	97	.811
TOTAL	1423.586							335.8				318.1				11.293
AVERAGE		3.888			265.3	44.9	83		280.4	25.3	90		8.3	.7	90	
MAXIMUM			17.600	20.500												
NO. OF SAMPLES					21	21			21	21			21	21		

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

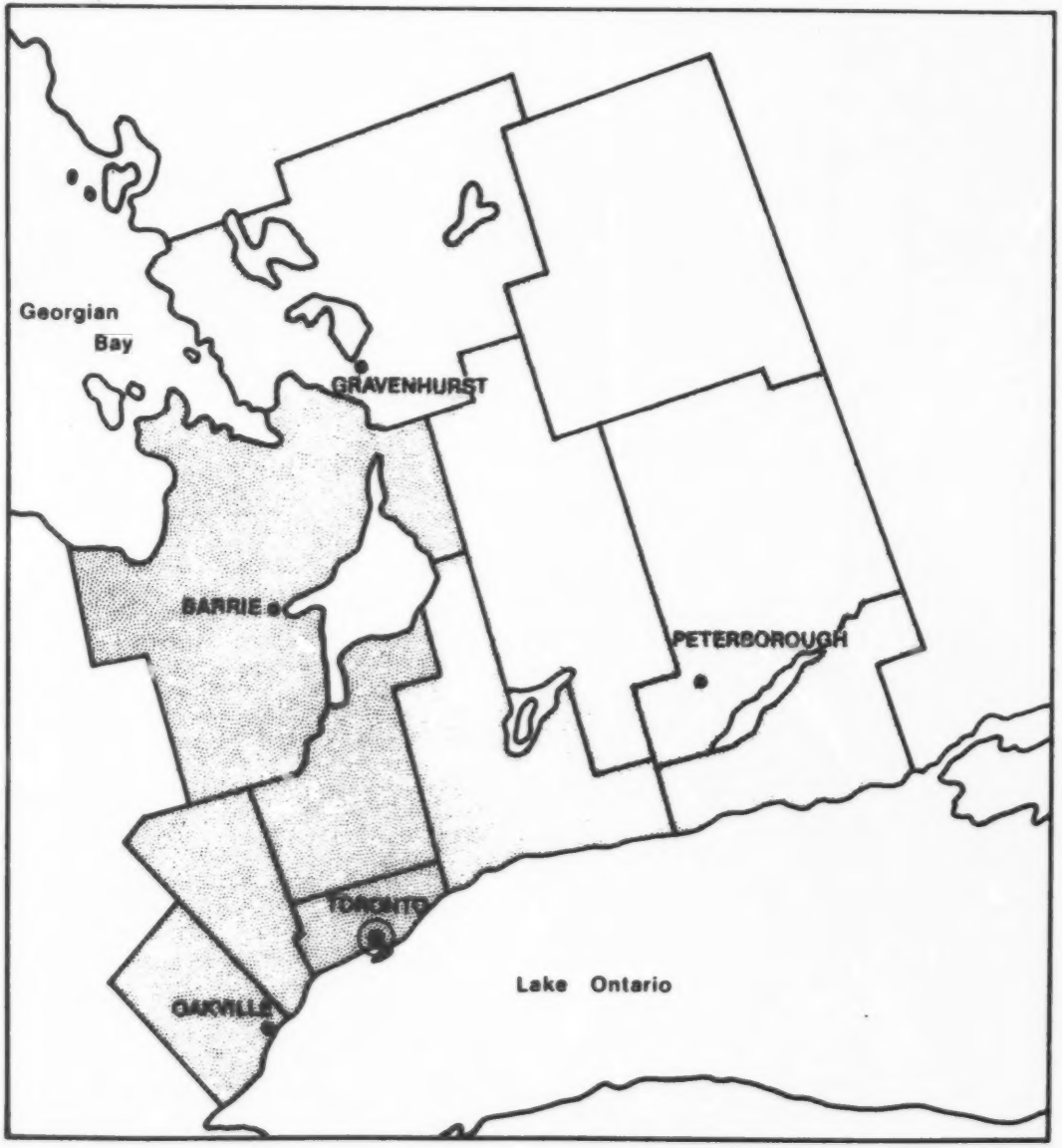
Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386



Central Region
(3)

Ministry of the Environment
Ontario

DESIGN DATA - METRIC

MIDLAND

PROJECT Town of Midland WPCP

PROJECT NO. 2-0146-83

TREATMENT Primary

DESIGN FLOW 5.683 $10^3 m^3/d$

DESIGN POPULATION 12,500

BOD - Raw Sewage 225 mg/l
- Removal 40%

SS - Raw Sewage 300 mg/l
- Removal 60%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C

Grit Removal

Type: Dorr Detritor
Size: One 3.67m x 3.67m x .41m ($5.46 m^3$)
Retention: 1.38 min.

Primary Sedimentation

Type: Dorr
Size: Two 5.24m dia. x 2.44m swd
Volume: $886.47 m^3$
Retention: 3.75 hours
Loading: Surface, $15.595 m^3/m^2.d$
Weir, $59.1 m^3/m.d$

CHLORINATION

Type: W & T, Type A711 (Auto)
Size: One 453.6 kg/day

Chlorine Contact Chamber

Size: Irregular ($73.65 m^3$)
Retention: 18.7 min.

OUTFALL

187.45m of 609.6mm pipe to Georgian Bay.

SLUDGE HANDLING

Digestion System - Two Stage

Primary --
Type: Babcock-Wilson
Draft tube mixers (2)
Size: One 9.14m dia. x 6.71m
Volume: $441.87 m^3$
Loading: $68.9 kg/m^3/mo$

Secondary --
Type: Fixed steel cover
size: One 9.14 m dia. x 6.55 m
Volume: $430.05 m^3$
Total Loading: $32.5 kg/m^3/mo$.

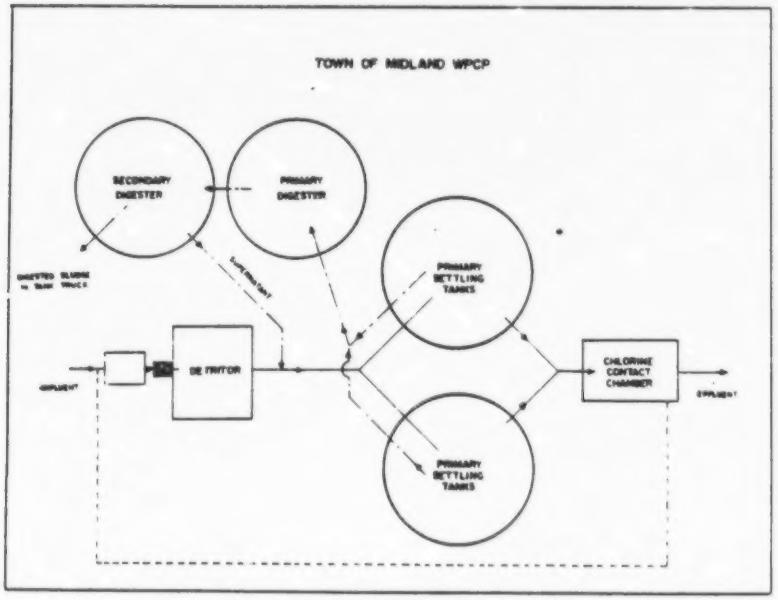
PUMPING STATIONS

#1 Pumping Station

Type: Worthington
Size: Two 59.05 l/s @ 11.27m TDH
One 196.82 l/s @ 18.29m TDH

#2 Pumping Station

Type: Flygt (submersible)
Size: Two, each 14.38 l/s @ 9.14m TDH



DESIGN DATA - IMPERIAL

PROJECT Town of Midland WPCP

PROJECT NO. 2-0146-83

TREATMENT Primary

DESIGN FLOW 1.25 mgd

DESIGN POPULATION 12,500

BOD - Raw Sewage 225 mg/l
- Removal 40%

SS - Raw Sewage 300 mg/l
- Removal 60%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C

Grit Removal

Type: Dorr Detritor
Size: One 12' x 12' x 18" (1,200 gal)
Retention: 1.38 min

Primary Sedimentation

Type: Dorr
Size: Two 50' dia x 8' swd 195,000 gal)
Retention: 3.75 hours
Loading: Surface, 319 gal/ft^2/day
Weir, 3970 gal/ft/day

CHLORINATION

Type: W & T, Type A711 (Auto)
Size: One 1000 lb/day

Chlorine Contact Chamber

Size: Irregular (16,200 gal)
Retention: 18.7 min

OUTFALL

615' of 24" pipe to Georgian Bay

SLUDGE HANDLING

Digestion System - Two Stage

Primary --
Type: Babcock-Wilson
Draft tube mixers (2)
Size: One 30' dia x 22' (15,600 cu ft or 97,200 gal)
Loading: 4.3 lb/cu ft/mo

Secondary --
Type: Fixed steel cover
Size: One 30' dia x 21½' (15,200 cu ft or 94,800 gal)
Total Loading: 2.2 lb/cu ft/mo

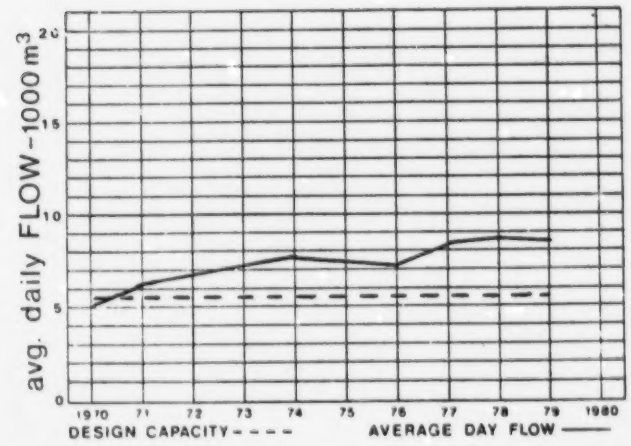
PUMPING STATIONS

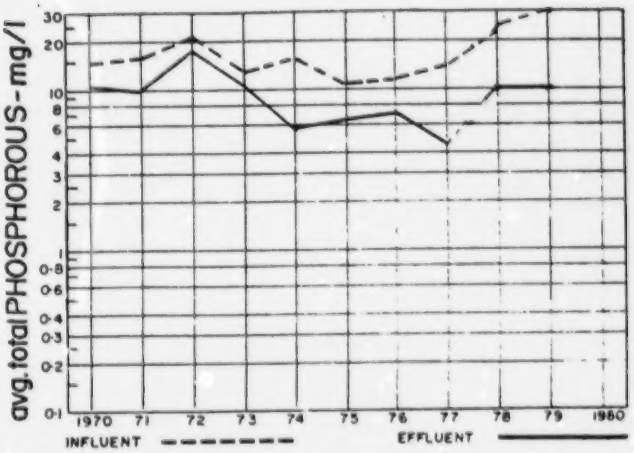
#1 Pumping Station

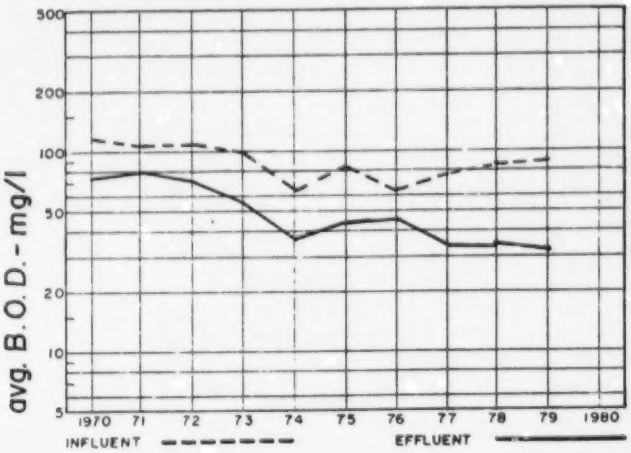
Type: Worthington
Size: Two 780 gpm @ 37' tdh
One 2600 gpm @ 60' tdh

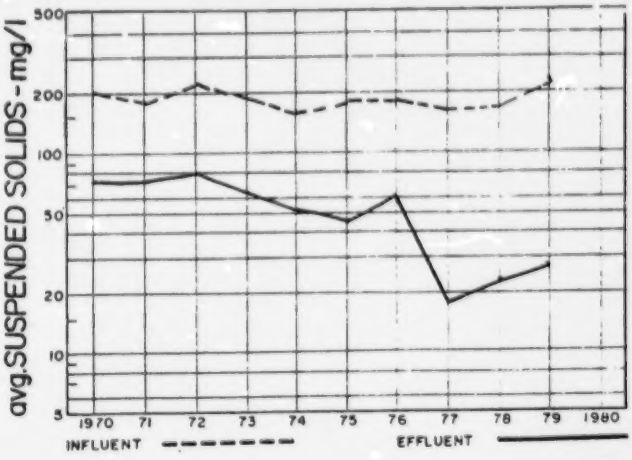
#2 Pumping Station

Type: Flygt (submersible)
Size: Two, each 190 gpm @ 30' tdh









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000463 MIDLAND WPCP (MUNICIPALITY TO OPERATE - APR 1980)

MUNICIPALITY : MIDLAND
REGION : 03 CENTRAL

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 12,500
POPULATION SERVED : 12,000
PERCENT SERVED : 96.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.682 1000 M3 DESIGN BOD5 : 225.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	228.396	7.369	8.828	12.729	125.0	44.0	64	18.5	210.0	28.0	86	41.5	48.0	16.0	66	7.309
FEB	208.175	7.433	9.615	21.366	140.0	44.0	68	19.9	210.0	35.0	83	36.4	36.0	12.0	66	4 996
MAR	399.252	12.879	19.984	23.185	38.0	19.0	50	7.5	120.0	30.0	75	35.9	17.0	6.7	60	4 112
APR	318.410	10.550	18.180	23.180	38.0	20.0	47	5.6	165.0	55.0	66	34.8	13.0	5.7	56	2.310
MAY	263.820	8.510	9.470	22.730	60.0	24.0	60	9.4	140.0	30.0	78	29.0	16.0	6.7	58	2 454
JUN	217.410	7.247	10.040	23.640	60.0	22.0	63	8.2	170.0	15.0	91	33.6	28.0	8.3	70	4.283
JUL	198.183	6.393	8.606	22.260	165.0	38.0	76	25.1	285.0	25.0	91	51.5	31.0	7.1	77	4.737
AUG	210.956	6.805	9.415	22.730	58.0	28.0	51	6.3	265.0	35.0	86	48.5	5 2	9	81	899
SEP	215.046	7.168	10.851	22.730	70.0	25.0	64	9.6	245.0	20.0	91	48.3	40 0	7.0	82	7.097
OCT	262.934	8.482	10.351	20.912	130.0	58.0	55	18.9	385.0	20.0	94	95.9	70 0	28.0	62	11 589
NOV	263.962	8.799	12.038	22.500	78.0	30.0	61	12.6	150.0	30.0	80	31.6	29.0	8.6	70	5.385
DEC	318.914	10.288	19.754	23.000	90.0	26.0	71	20.4	175.0	20.0	88	49.4	28 0	15.0	46	4.148
TOTAL	3103.458							162.7				536.9				59.297
AVERAGE		8.494			87.6	31.5	64		210.0	28.5	86		30.1	10.0	66	
MAXIMUM			19.984	23.640												
NO. OF SAMPLES					12	12			12	12			12	12		

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Southeastern Region

④

Ministry of the Environment
Ontario

DESIGN DATA - METRIC

CORNWALL

PROJECT: City of Cornwall WPCP

PROJECT NO: 1-0001-66

DESIGN FLOW: 37.5 $10^3 m^3/d$

DESIGN POPULATION: 66,000

DESIGN LOADING

BOD - 130 mg/l

SS - 160 mg/l

Treatment: Primary

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: Two Type "C"

Screening (Bypass channel)

Size 50 mm spaces

Grit Removal

Type: Aerated: grit removed by clamshell bucket
Size: Two 11.7m x 4.8m x 4.1m (447.8 m^3)
Retention: 1/ min

Air Supply

Type: Hoffman
Size: Two 459.7l/s (also for channel aeration)

Primary Sedimentation

Type: Jeffrey
Size: Two 44.2m x 5.5m x 3.7m (5.56 x $10^3 m^3$)
Retention: 3 hours
Loading Surfaces: 8.9 m^3/m^2·d
Weir: 213.1 m^3/md

CHLORINATION

Chlorinator

Type: W & T
Size: One 907.2 kg/d with evaporator

Chlorine Contact Chamber

Size: One 14.8m x 8.2m x 3.2m (390.0 m^3)
Retention: 15 min

OUTFALL

- to St. Lawrence River

SLUDGE HANDLING

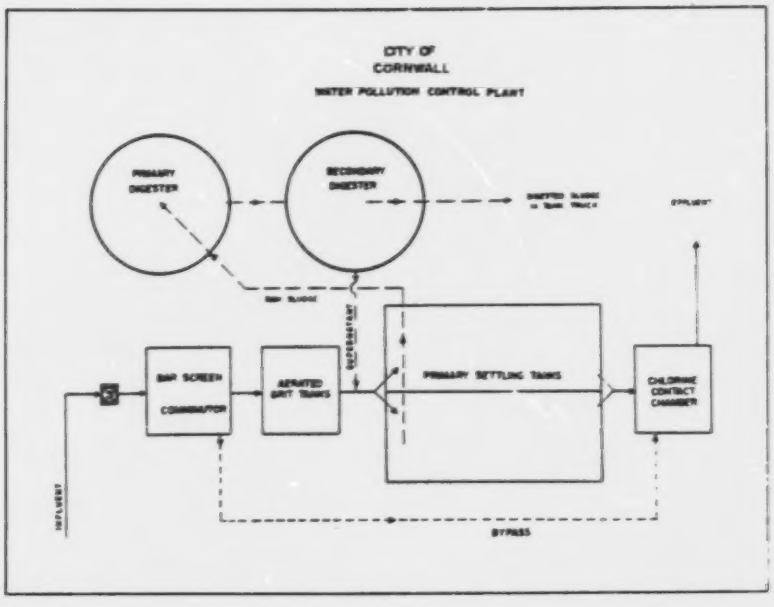
Digestion System - Two-stage

Primary Digester -
Type: Perth (gas mixed) with fixed concrete cover
Size: One 19.8m dia. x 7.3m swd (2336 m^3)
Loading: 29.4 kg/m^3·d

Secondary Digester -
Size: 19.8m dia x 7.3m swd (2336 m^3)
Total Loading: 14.69 kg/m^3·d)

Disposal

- by tank truck



DESIGN DATA - IMPERIAL

PROJECT City of Cornwall WPCP

PROJECT NO. 1-0001-66

DESIGN FLOW 8.25 mgd

DESIGN POPULATION 66,000

DESIGN LOADING

BOD - 130 mg/l

SS - 160 mg/l

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: Two Type "C"

Screening (Bypass channel)

Size: 2" spaces

Grit Removal

Type: Aerated: grit removed by clamshell bucket
Size: Two 38' 6" x 15' 10" x 13' 3" swd (96,500 gal)
Retention: 17 min

Air Supply

Type: Hoffman
Size: Two 1,100 scfm (also for channel aeration)

Primary Sedimentation

Type: Jeffrey
Size: Two 143' x 49' x 12' (1.245 mil gal)
Retention: 3 hours
Loading: Surface, 800 gal/ft^2/day
Weir, 14300 gal/ft/day

CHLORINATION

Chlorinator

Type: W & T
Size: One 2,000 lb/day with evaporator

Chlorine Contact Chamber

Size: One 48' 7" x 26' 11" x 10' 6" (85,800 gal)
Retention: 15 min

OUTFALL

- to St. Lawrence River

SLUDGE HANDLING

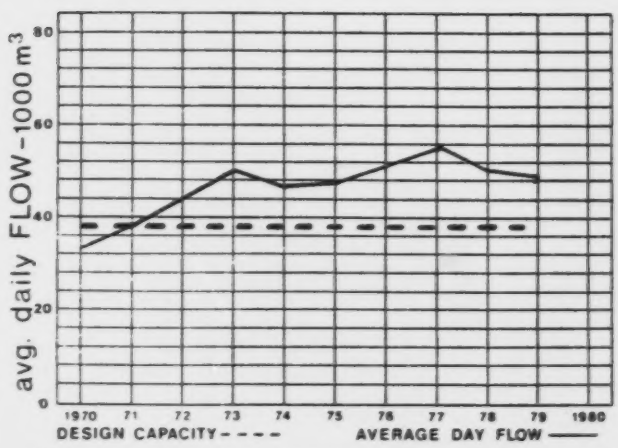
Digestion System - Two-stage

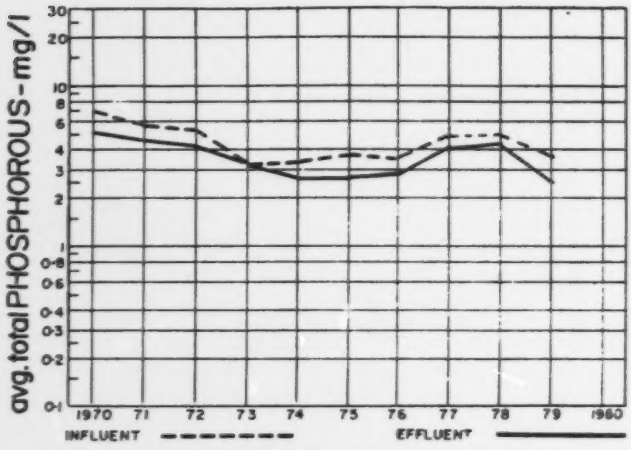
Primary Digester -
Type: Perth (gas mixed) with fixed concrete cover
Size: One 65' dia x 24' swd (82,500 cu ft or 0.515 mil gal)
Loading: 2.88 lb/cu ft/day

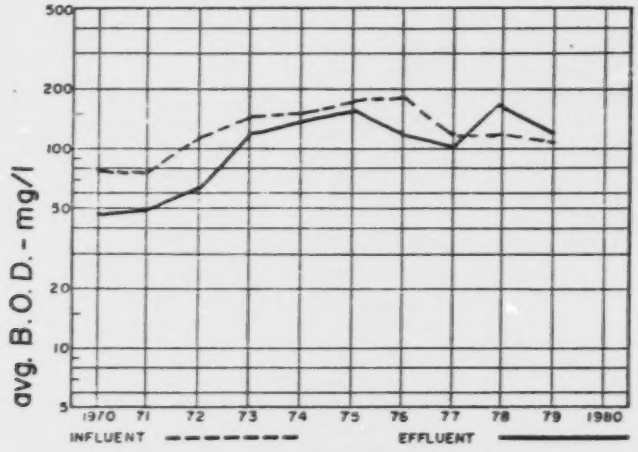
Secondary Digester -
Size: One 65' dia x 24' swd (82,500 cu ft or 0.515 mil gal)
Total Loading: 1.44 lb/cu ft/day

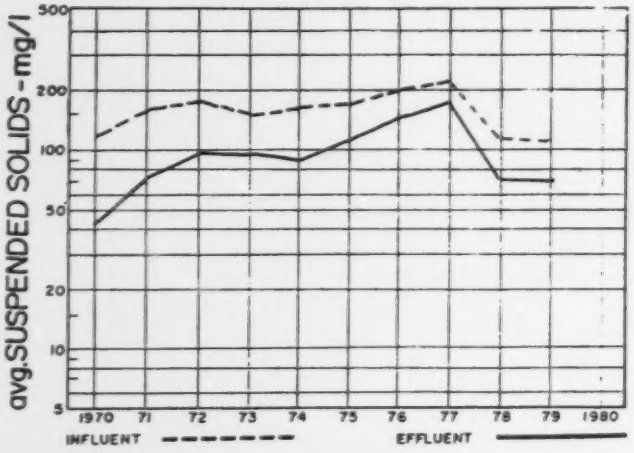
Disposal

- by tank truck









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000132 CORNWALL WPCP

MUNICIPALITY : CORNWALL
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL
(THIS SYSTEM TREATS INDUSTRIAL WASTES)

CURRENT POPULATION : 46,152
POPULATION SERVED : 46,500
PERCENT SERVED : 100.7

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 37.504 1000 M3 DESIGN BODS : 130.0 MG/L DESIGN SUSP.SOLIDS : 180.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	1184.200	38.200	77.200	120.000	175.0	180.0	-	-	163.0	143.0	12	23.6	3.7	3.3	10	.474
FEB	1009.200	36.000	70.500	114.000	201.0	294.4	-	-	140.0	124.0	11	16.1	4.2	3.9	7	.303
MAR	2252.998	72.673	95.011	118.000	133.0	155.0	-	-	133.0	73.3	44	134.5	3.0	2.7	10	.676
APR	1775.730	59.200	99.000	118.000	49.0	47.2	3	3.1	75.0	33.0	56	74.5	2.8	1.2	57	2.841
MAY	1202.800	39.000	65.600	100.000	97.0	95.0	2	2.4	108.0	43.0	60	78.1	3.8	1.9	50	2.285
JUN	1247.600	40.200	61.000	118.000	183.0	190.0	-	-	92.0	73.0	20	23.7	3.8	4.0	-	-
JUL	1439.000	46.420	82.000	116.000	58.0	95.0	-	-	146.0	61.3	58	121.8	4.1	3.0	26	1.583
AUG	1314.100	42.400	58.500	106.000	65.0	55.0	15	13.1	128.0	78.0	39	65.7	4.5	2.2	51	3.022
SEP	1571.000	52.300	92.000	118.000	70.0	55.0	21	23.5	73.0	73.0			4.0	2.0	50	3.142
OCT	1483.000	47.800	60.200	97.000	102.7	85.3	16	25.8	90.0	57.8	35	47.7	3.9	2.4	38	2.225
NOV	1471.700	49.060	84.000	99.000	92.0	58.5	36	49.3	93.5	80.0	13	18.3	3.2	1.5	53	2.502
DEC	1822.100	58.800	103.100	109.000	45.0	43.0	4	3.8	72.2	68.0	5	7.8	3.3	3.8	19	1.188
TOTAL	17773.428							121.0				612.1				20.219
AVERAGE		48.504			105.8	112.7	-		109.3	75.6	30		3.6	2.5	30	
MAXIMUM			103.100	120.000												
NO. OF SAMPLES					46	47			52	53			48	49		

DESIGN DATA - METRIC

PROJECT: Petawawa, DND, WPCP

PROJECT NUMBER: 1-0135-67

TREATMENT: Primary with 2 stage digestion

DESIGN FLOW: 7.27 $10^3 m^3/d$

DESIGN POPULATION: 16,761

DESIGN LOADING:

BOD 110 mg/l
SS 80 mg/l

PUMPING STATIONS

#1 Petawawa Street

2 pumps, 5.53 l/s and 1.12 kW each, 15 kW generator

#2 Harry Street

2 pumps, 20.82 l/s and 14.9 kW each 50 kW generator

PRIMARY TREATMENT

Grit Channels
Type: Two straight line rectangular grit washing channels
Velocity: .305 m/s

Comminution

Type: Barminutor
Size: 457.2 mm

Parshall Flume

Size: 228.0 mm width x 609.6 mm depth with 50.8 m pressure tape at gauging point.

PETAWAWA

Aerated Grit and Pre-aeration Tanks

Type: Two combined function tanks
Detention: 30 min. at a flow of 7.27 $10^3 m^3/d$
Flow Velocity: 0.61 m/s
Air Velocity: 1.42 l/s (provided by positive rotary blower)

Primary Settling Tank

Size: Two, 9.75 m x 9.75 m x 2.39 m
Detention: 92 min.
Surface settling rate: 38.12 $m^3/m^2 \cdot d$
Overflow trough:
Overflow rate: 134.1 $m^3/m \cdot d$
Pumps: Two plunger type pumps
Volume: 7.57 l/s
Speed: 50 R/min

CHLORINATION

Chlorine: Contact chamber: none, instead chlorine added to effluent sewage in a manhole on the outfall sewer
Detention: 19 min at a flow of 7.3 $10^3 m^3/d$ with minimum river elevation of 111 m.

OUTFALL

Size: 304.8 mm dia.
Wastewater goes to the Petawawa River then to the Ottawa River with sludge digestion.

SLUDGE HANDLING

Two-Stage Anaerobic Digestion

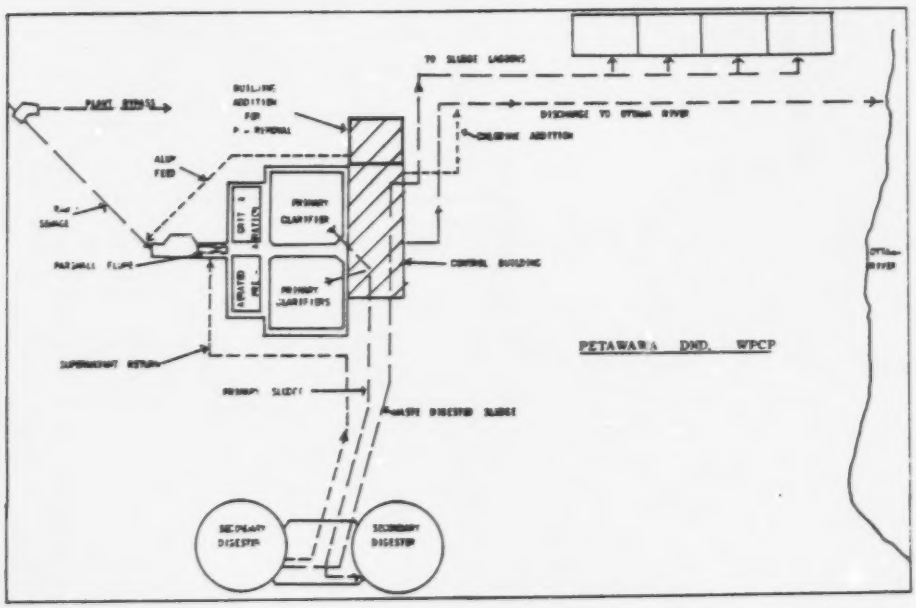
Primary Digestion
Type: Heated
Volume: 836.29 m^3
Mixing: Provided by a gas lifter with a diffusion head
Educator tube: Encloses diffuser 508.0 mm dia - [illegible] mm thick steel)
Sludge heating: 2.97 m^2 external heat exchanger

SECONDARY DIGESTION

Type: Unheated
Volume: 765.77 m^3
Gas storage capacity: 28.07 m^3 at a working pressure of 214.9 mm W.C.
Tank cover travel area: 3.66 m^2

PHOSPHORUS REMOVAL

Chemical Used: Alum
Storage Facilities: 22.73 m^3 [illegible] tank
1.36 m^3 [illegible] tank
Two, 0.45 [illegible] F.R.P. Tanks



DESIGN DATA - IMPERIAL

PROJECT: Petawawa, DND, WPCP

PROJECT NUMBER: 1-0135-67

TREATMENT: Primary with 2-stage digestion

DESIGN FLOW: 1.6 MGD

DESIGN POPULATION: 16,761

DESIGN LOADING:

BOD 110 mg/l
SS 80 mg/l

PUMPING STATIONS

#1 Petawawa Street
2 pumps, 73 gpm and 1.5 HP each, 15 kW generator

#2 Harry Street

2 pumps, 275 gpm and 20 HP each, 50 kW generator.

PRIMARY TREATMENT

Grit channels
Type: Two straight line rectangular grit washing channels
Velocity: 1 ft./sec.

Comminution
Type: Barminutor
Size: 18"

Parshall Flume

Size: 9" width x 24" depth with 2" pressure tap at gauging point.

PETAWAWA

Aerated Grit and Pre-aeration Tanks

Type: Two combined function tanks
Detention: 30 min. at a flow of 1.6 MIGD
Flow velocity: 2 ft./sec.
Air Velocity: 3 cu.ft./min (provided by positive rotary blowers)

PRIMARY SETTLING TANK

Size: two, 32' x 32' x 7' 10"
Detention: 92 min.
Surface settling rate: 780 lg/ft.^{2}/d
Overflow trough: 93'
Overflow rate: 9000 lg/ft/d
Pumps: Two plunger type pumps
Volume: 100 l GPM
Speed: 50 rpm

CHLORINATION (Pre and Post)

Chlorine contact chamber: none, instead chlorine added to effluent sewage in a manhole on the outfall sewer.
Detention: 19 min. at flow of 1.6 MIGD with minimum river elevation of 363.0 ft

OUTFALL

Size: 12" dia.
Wastewater goes to the Petawawa River then to the Ottawa River with sludge digested.

SLUDGE HANDLING

Two-Stage Anaerobic Digestion

Primary Digestion

Type: Heated
Volume: 29,530 ft.^{3}
Mixing: Provided by a gas lifter with a diffusion head
Educator tube: Encloses diffuser - 20" in. dia.
Sludge heating: 35 sq.ft. external heat exchanger

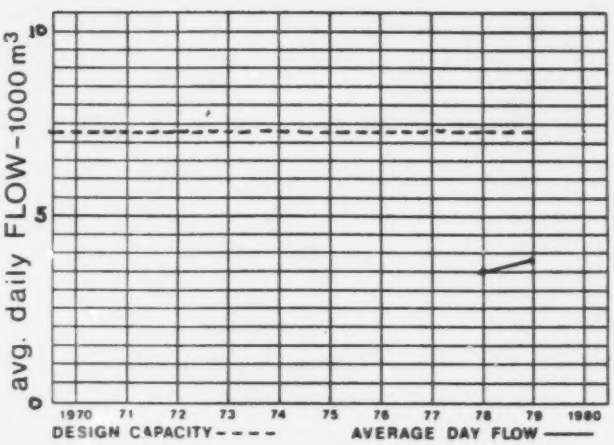
SECONDARY DIGESTION

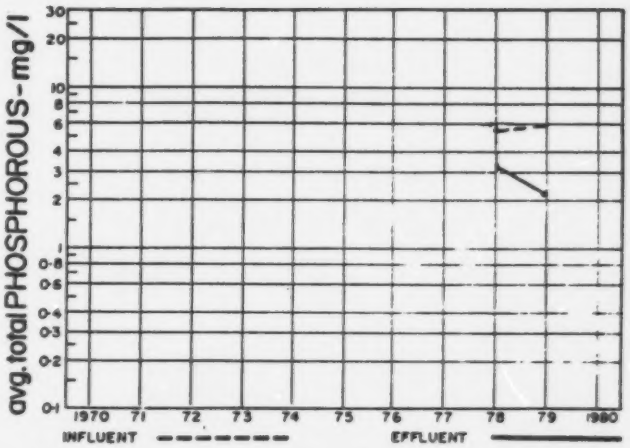
Type: Unheated
Volume: 27,040 ft.^{3}
Gas Storage Capcity: 8500 cu.ft. at a working pressure of 3.5" w.c.
Tank cover travel area: 12 ft.

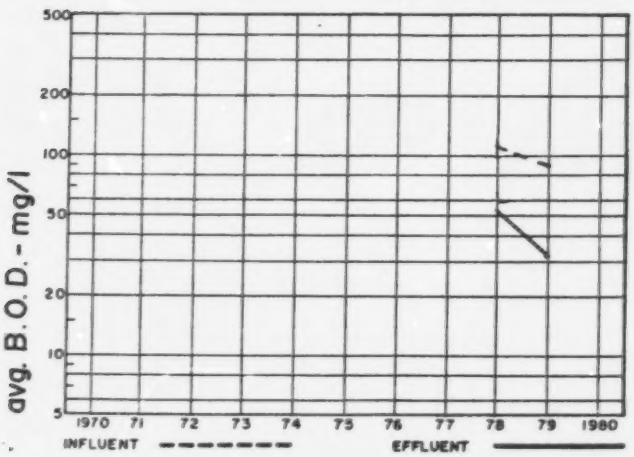
PHOSPHORUS REMOVAL

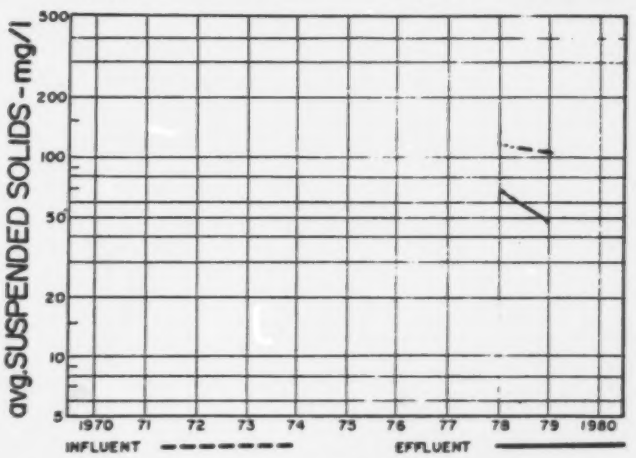
Chemical Used: Alum
Storgage Facilities: 5000 gallon F.R.P. tank
300 gallon F.R.P. tank
Two - 100 gallon F.R.P. tanks

PETAWAWA









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120000587 PETAWAWA W P C P TAKEN OVER APR 78

MUNICIPALITY : PETAWAWA
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 5,565
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY : MUNICIPALITY

DESIGN CAPACITY : 7.273 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	100.185	3.232	4.137	5.455	72.0	32.0	55	4.0	83.0	43.0	48	4.0	5.8	1.9	67	.391
FEB	89.397	3.193	3.978	6.364	115.0	42.5	63	6.4	78.0	41.6	46	3.2	5.6	1.8	67	.340
MAR	103.631	3.342	3.996	11.385	160.0	46.0	71	11.8	111.0	64.0	42	4.8	8.2	2.9	53	.342
APR	167.600	5.580	9.770	10.910	100.0	79.0	21	3.5	105.0	61.0	41	7.3	5.2	3.2	39	.349
MAY	173.512	5.783	12.274	12.274	84.0	40.8	51	7.5	110.8	52.2	52	10.1	5.7	2.4	58	.580
JUN	90.693	3.020	6.810	6.810	72.0	36.5	49	3.2	87.5	44.0	49	3.9	5.0	2.7	46	.214
JUL	103.194	3.320	3.970	6.810	47.5	5.5	88	4.3	50.0	27.0	46	2.3	4.8	1.6	67	.335
AUG	104.060	3.350	5.390	6.810	78.0	7.0	91	7.3	171.0	57.0	66	11.8	6.2	1.8	70	.458
SEP	114.104	3.680	5.110	6.810	108.0	10.0	90	11.1	174.0	70.0	59	11.8	6.1	1.8	69	.484
OCT	126.948	4.090	4.440	4.430	105.0	32.0	69	9.2	109.0	48.0	57	7.9	5.7	2.2	60	.444
NOV	109.200	3.640	6.080	6.080	70.5	17.0	75	5.8	74.0	33.0	55	4.4	5.3	2.3	58	.330
DEC	94.090	3.030	3.570	9.720	160.0	24.0	85	12.7	85.0	50.0	41	3.2	11.0	.9	91	.990
TOTAL	1376.614							87.3				75.4				5.217
AVERAGE		3.772			97.6	31.0	68		103.1	49.0	52		6.0	2.1	64	
MAXIMUM			12.274	12.274												
NO. OF SAMPLES					20	20			60	60			60	60		

DESIGN DATA - METRIC

PRESCOTT

PROJECT Town of Prescott WPCP

PROJECT NO. 1-0023-66

TREATMENT Primary

DESIGN FLOW 4.456 $10^3 m^3/d$

DESIGN LOADING

BOD - 80 mg/l

SS - 160 mg/l

PRIMARY TREATMENT

Grit Removal

Type: Manually cleaned
Size: Two 8.0m x 1.1m x 1m
Flow Velocity: .304 m/s

Screening

Type: Manually cleaned
Size: 25.4mm openings

Comminution

Type: Worthington #15-5

Primary Sedimentation

Type: Dorr-Oliver
Size: Two 10.7 m dia x 2.7m swd.
Volume: 491.0 m^3
Retention: 2¼ hours
Loading: Surface: 48.9 $m^3/m^2.d$
Weir: 149. $m^3/m.d$

CHLORINATION

Type: Wallace & Tiernan: A831
Size: Two 22.7 kg/day each

Chlorine Contact Chamber

Size: 153.7 m^3
Retention: 30 minutes

OUTFALL

504.0 m concrete pipe to
St. Lawrence River

SLUDGE HANDLING

Digestion System

Type: Single stage 10.7 x 5.5
Size: 107m dia x 5.5m swd (681.9 m^3)
Loading: 26.2 $kg/m^3/mo.$
Recirculation Pump: Smart Turner

PUMPING STATION

a) West Street

Two Smart-Turner, each 65.9 l/s @ 11.0m TDH

b) East Street

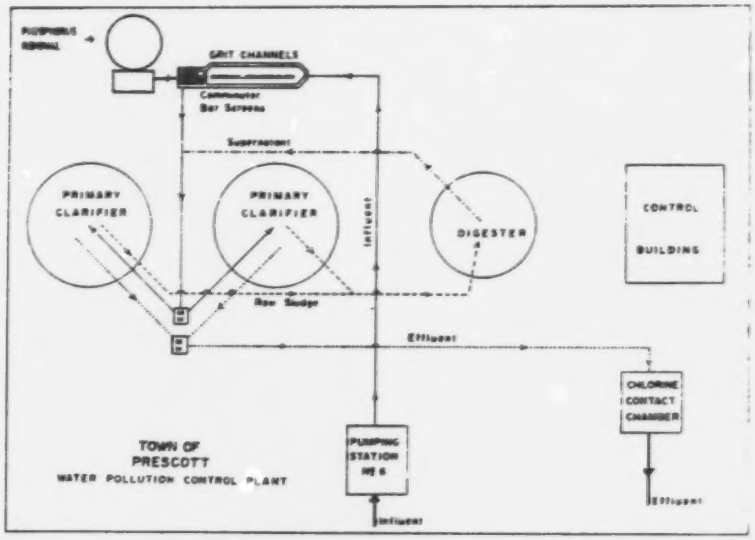
Two Smart-Turner, each 65.9 l/s @ 23.2m TDH

c) Highway 2 & Keefer Street

Two Smart-Turner, each 159.0 l/s @ 23.2m TDH

d) Plant Site

Two Smart-Turner 106 l/s @ 10.1m TDH
One Marathon variable speed



DESIGN DATA - IMPERIAL

PROJECT Town of Prescott WPCP

PROJECT NO. 1-0023-66

TREATMENT Primary

DESIGN FLOW 1.0 MIGD
DESIGN LOADING
BOD - 80 mg/l

SS - 160 mg/l

PRIMARY TREATMENT

Grit Removal

Type: Manually cleaned
Size: Two 26'2" x 3'9" x 3'4"
Flow Velocity: 1.0 fps

Screening

Type: Manually cleaned
Size: 1" openings

Comminution

Type: Worthington #15-5

Primary Sedimentation

Type: Dorr-Oliver
Size: Two 35' dia x 9' swd.
(108,000 I. gals. total)
Retention: 2½ hours
Loading: Surface 1,000 I. gals/ ft^2/day
Weir, 10,000 I. gals/ ft/day

CHLORINATION

Type: Wallace & Tiernan A-831
Size: Two 50 lbs/day each

Chlorine Contact Chamber

Size: 33,900 gal.
Retention: 30 minutes

OUTFALL

1650' 42" dia. concrete pipe to
St. Lawrence River

SLUDGE HANDLING

Digestion System

Type: Single stage
Size: 35' dia x 18 swd (150,000 I.G.)
Loading: 1.6 $lb/ft^3/mo.$
Recirculation Pump: Smart Turner

PUMPING STATION

a) West Street

Two Smart-Turner, each 870 IGPM @ 36' tdh

b) East Street

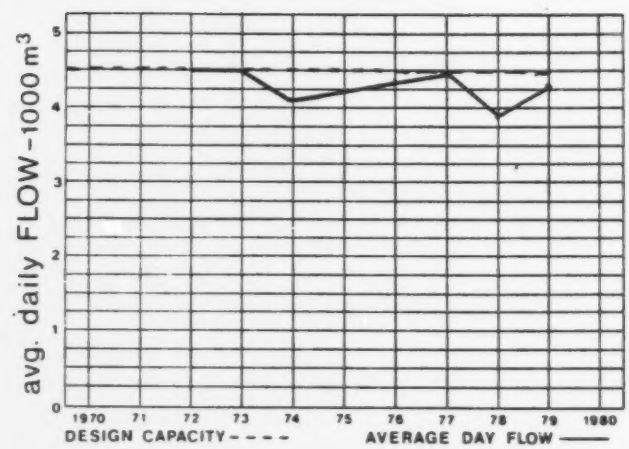
Two Smart-Turner, each 1410 IGPM @ 44' tdh

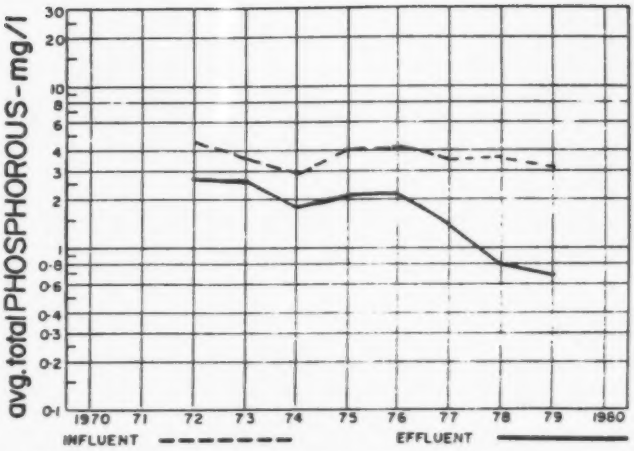
c) Highway 2 & Keefer Street

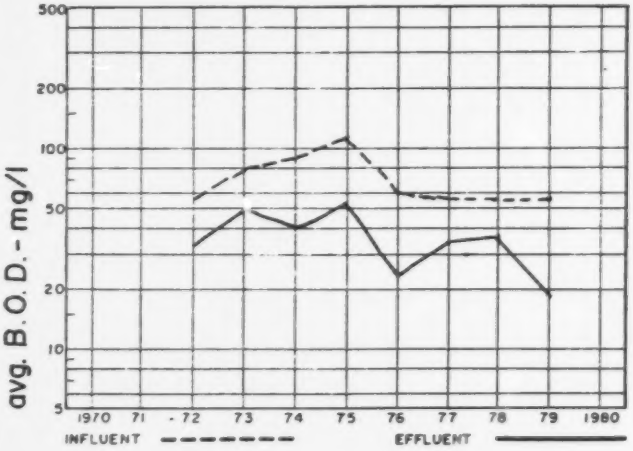
Two Smart-Turner, each 2100 IGPM @ 76' tdh

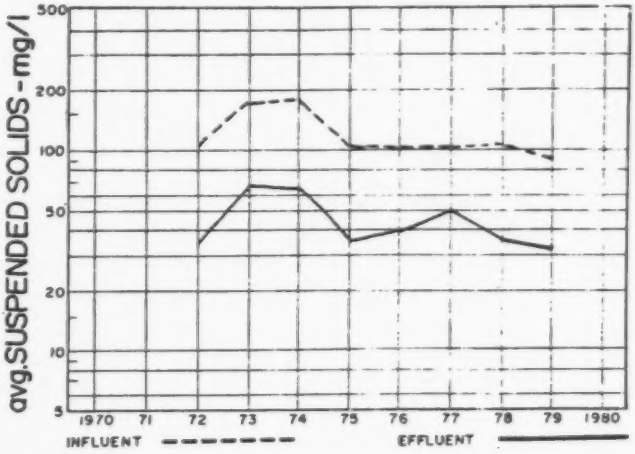
d) Plant Site

Two Smart-Turner 1400 IGPM @ 33' TDH
One Marathon variable speed









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001122 PRESCOTT WPCP

MUNICIPALITY : PRESCOTT
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 4,803
POPULATION SERVED : 4,800
PERCENT SERVED : 99.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.548 1000 M3 DESIGN BOD5 : 80.0 MG/L DESIGN SUSP.SOLIDS : 180.0 MG/L

<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->										
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	116.478	3.757	5.432		40.0	32.5	18	8	81.0	38.5	52	4.9	2.9	1.0	65	.221
FEB	101.276	3.617	4.910		52.0	41.0	21	1.1	70.0	45.0	35	2.5	3.8	.9	76	.294
MAR	233.210	7.523	13.942		35.0	34.0	2	.2	70.0	49.0	30	4.8	1.8	.8	55	.233
APR	185.831	6.194	10.180		23.0	18.5	19	.8	46.0	27.0	41	3.5	2.7	.8	70	383
MAY	118.318	3.816	5.220		58.0	18.0	68	4.7	95.0	32.0	66	7.4	3.4	.8	76	308
JUN	96.250	3.208	4.110		64.0	18.0	71	4.4	100.0	34.0	66	6.3	3.0	.8	73	.212
JUL	84.530	2.726	3.290		78.0	10.5	86	5.7	85.0	35.0	58	4.2	3.7	.5	86	270
AUG	97.570	3.147	4.300		78.0	14.0	82	6.2	135.0	30.0	77	10.2	3.4	.5	85	.283
SEP	132.820	4.427	18.010		46.0	14.0	69	4.2	92.0	35.0	61	7.5	3.2	.7	78	.332
OCT	126.520	4.080	4.750		40.0	8.0	80	4.0	70.0	17.0	75	6.7	2.9	.4	86	.318
NOV	133.020	4.434	10.180		46.0	13.0	71	4.3	102.0	21.0	79	10.7	2.8	.6	78	.293
DEC	133.020	4.434	7.680		50.0	18.0	64	4.2	143.0	29.0	79	15.1	3.9	.9	76	399
TOTAL	1558.833							41.1				84.4				3.514
AVERAGE		4.280			50.8	19.9	60		90.7	32.7	63		3.1	.7	78	
MAXIMUM			18.010													
NO. OF SAMPLES					25	25			25	25			55	55		

Ministry of the Environment
Ontario

Northeastern Region

⑤

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

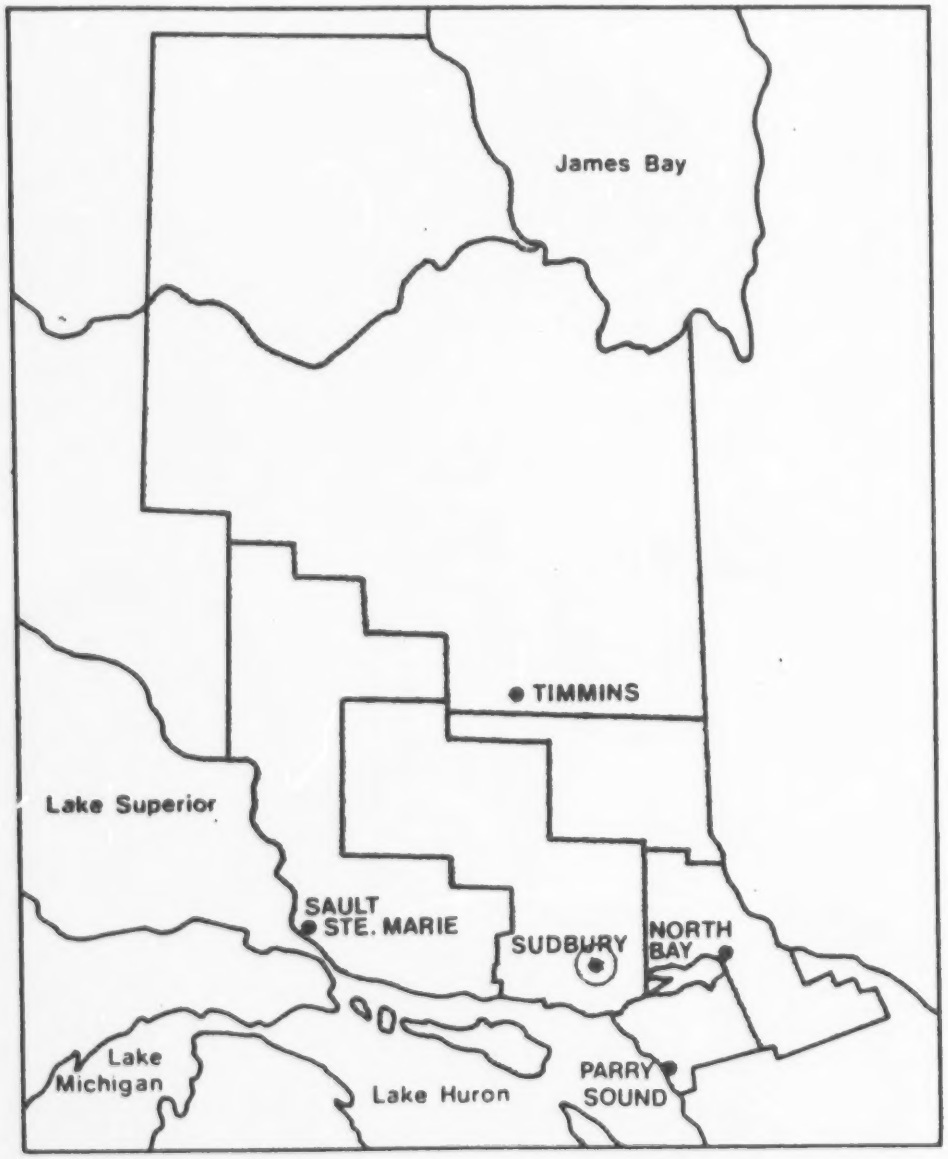
Sault Ste. Marie
445 Albert St. E.
705-949-4640

Timmins
83 Algonquin Blvd. W.
705-264-9474

Parry Sound
74 Church St.
705-746-2139

Northeastern Region
5

Ministry of the Environment
Ontario



DESIGN DATA - METRIC

ESPANOLA

PROJECT NAME: Town of Espanola WPCP

PROJECT NO: 2-0074-61

TREATMENT: Primary

DESIGN FLOW: 3 000 $10^3 m^3/d$

SCREENING:

2 manually cleaned bar screens

GRIT REMOVAL

Two channel: 4.4m x .4m x .1m
(liq. depth)
Flow Velocity: 0.4m/s

PRIMARY SEDIMENTATION

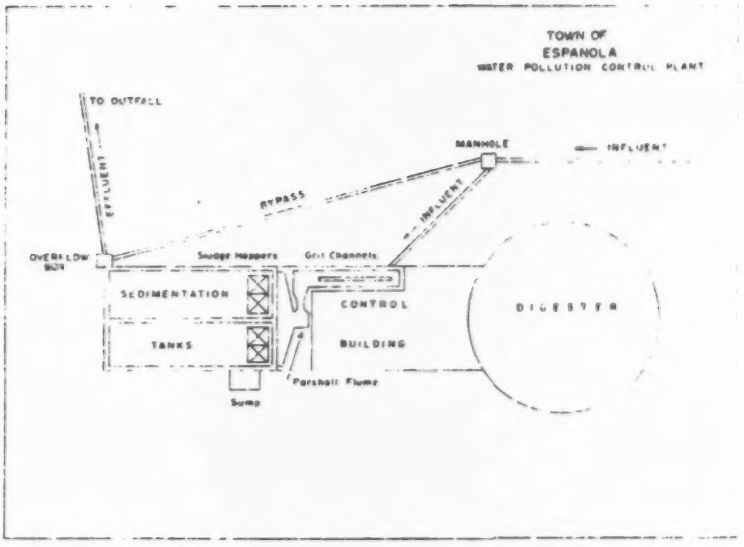
Size: Two 11.0m x 3.6m x 3.0m
Volume: 245 m^3
Retention: 1.95 hours
Loading: Surface 17.8 $m^3/m^2 \cdot d$

OUTFALL

Spanish River

SLUDGE DISPOSAL

Single stage digestion, fixed roof
Size: One 10.7m dia. x 5.9m swd
Volume: 529 m^3



DESIGN DATA - IMPERIAL

PROJECT NAME: Town of Espanola WPCP

PROJECT NO: 2-0074-61

TREATMENT: Primary

DESIGN FLOW: 0.66 mgd

SCREENING: 2 manually cleaned bar screens

GRIT REMOVAL

Two channels - 14'6" x 1.5' x 1.07'
(liq. depth)
Flow Velocity - 1.0 fps

PRIMARY SEDIMENTATION

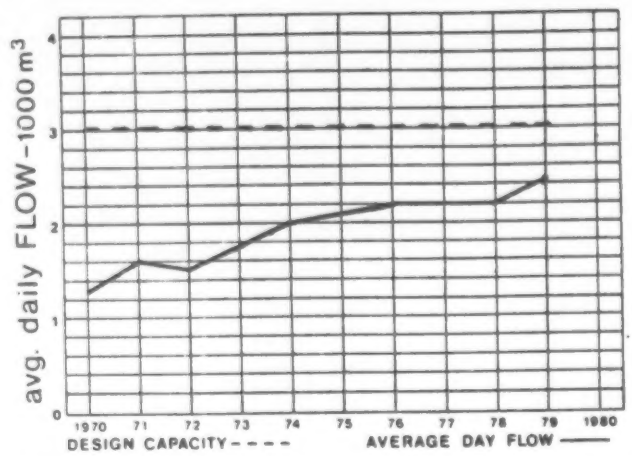
Size: Two 36' x 12' x 10'
Volume: 8640 ft^3 or 84,000 gal.
Detention: 1.95 hours
Loading: Surface 773 gpd/ft^2

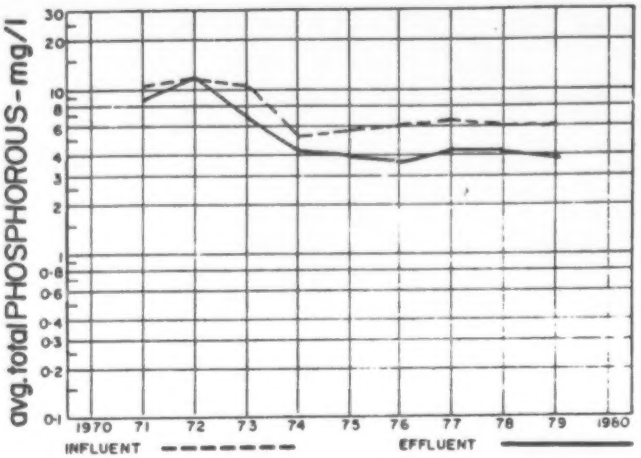
OUTFALL

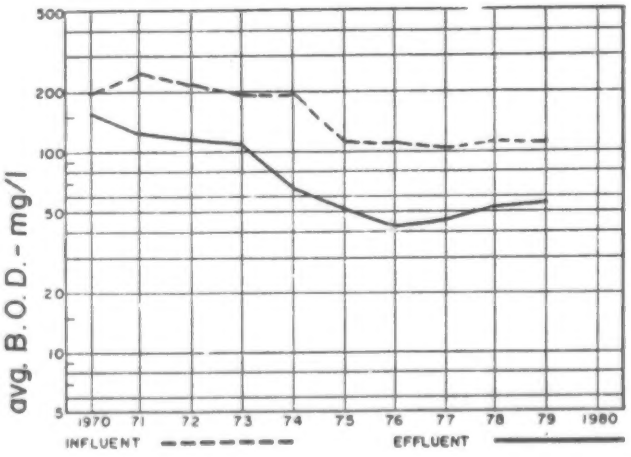
Spanish River

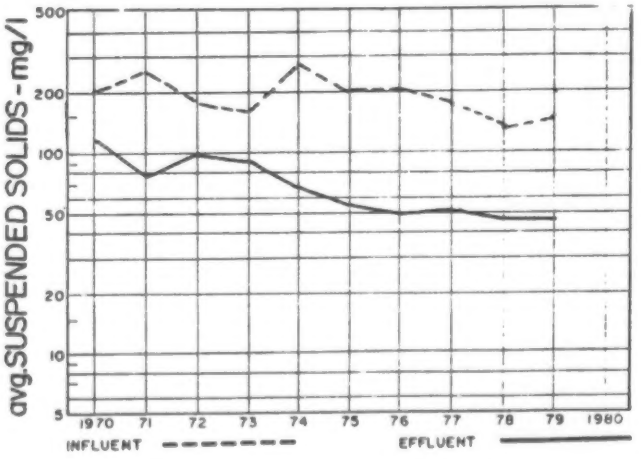
SLUDGE DISPOSAL

Single stage digestion, fixed roof
Size: One 35' dia. x 19.4' swd
Volume: 15,700 ft^3 or 116,000 gal.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000212 ESPANOLA WPCP

MUNICIPALITY : ESPANOLA
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : PRIMARY

CURRENT POPULATION : 5,388
POPULATION SERVED : 5,740
PERCENT SERVED : 106.5

* DATA NOT AVAILABLE

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.000 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	68.787	2.218	2.699		117.0	80.0	31	2.5	139.0	55.0	60	5.7	5.2	4.2	19	.069
FEB	67.059	2.395	3.189		143.0	78.0	46	4.4	117.0	42.0	64	5.0	5.6	4.2	25	.084
MAR	83.900	2.708	3.945		88.0	45.0	48	3.6	127.0	38.5	69	7.4	5.3	3.4	35	.159
APR	75.541	2.518	3.345		120.0	65.0	45	4.1	141.0	43.5	69	7.3	6.0	3.9	35	.159
MAY	81.620	2.632	3.091		147.0	36.5	75	9.0	224.5	31.1	86	15.7	6.0	3.7	38	.188
JUN	75.983	2.532	3.084		105.0	85.0	19	1.5	160.0	75.0	53	6.4	8.8	4.6	47	.319
JUL	78.395	2.528	3.171		85.5	28.5	66	4.4	145.0	45.0	68	7.8	4.7	*		
AUG	78.217	2.523	3.028		74.0	37.0	50	2.8	105.0	45.0	57	4.6	7.7	3.3	57	.344
SEP	72.743	2.424	2.836		77.0	32.5	57	3.2	140.0	42.5	69	7.0	5.3	2.4	54	.211
OCT	69.713	2.248	2.850		120.0	74.5	37	3.1	160.0	52.5	67	7.4	6.4	*		
NOV	64.481	2.149	2.661		117.5	62.0	47	3.5	162.5	50.0	69	7.2	5.8	4.1	29	110
DEC	73.304	2.364	2.935		120.0	68.0	43	3.0	145.0	50.0	65	6.9	6.2	4.7	24	.110
TOTAL	889.743							46.5				89.1				1.763
AVERAGE		2.437			109.5	57.5	47		147.1	47.5	67		6.0	3.8	36	
MAXIMUM			3.945													
NO. OF SAMPLES					27	26			32	32			20	16		

DESIGN DATA - METRIC

PROJECT: Town of Parry Sound WPCP

PROJECT NO: 2-0113-82

TREATMENT: Primary

DESIGN FLOW: 3.8 $10^3 m^3/d$

DESIGN POPULATION: 7,500

BOD - Raw Sewage 250 mg/l
- Removal 35%

SS - Raw Sewage 200 mg/l
- Removal 35%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C (.46m)

Grit Removal

Type: Dorr Detritor
Size: One 3.05m x 3.05 x .38m
Retention: 1.35 min

Primary Sedimentation

Type: Dorr
Size: Two 9.1m x 9.1m x 3.05m swd
Volume: 608.5m^3
Retention: 3.24 hr
Loading: Surface, 22.4$m^3/m^2 \cdot d$
Weir, 55.1m^3/md

CHLORINATION

Type: Wet type A-731
Size: One 90.7kg/day

PARRY SOUND

Chlorine Contact Chamber

Size: one 7.6m x 2.6m x 2.4m
Volume: 50.7m
Retention: 19.2 min

OUTFALL

- to McCurry Lake

SLUDGE HANDLING

Digestion System - Single-stage

Type: Dorr draft tubes (2)
Size: One 10.7m dia. x 6.3m swd
Volume: 582.8m^3

PUMPING STATIONS

#1: River Street P.S.
Type: Flygt CP-3100
Size: two 6.31 l/s @ 7.6m TDH

#2: Birch Street P.S.
Type: Flygt Submersible
Size: Two, 15.4 l/s

#3: Hawthorne Cres. P.S.
Type: Flygt CP-3100
Size: One, 3.2 l/s @ 9.4m TDH

#4: William Street P.S.
Type: Flygt CP-3100
Size: 26.5 l/s @ 11m TDH

#5: Cascade Street P.S.
Type: Robert Morse (Weinman)
Size: Two, 13.3 l/s @ 12.5m TDH

#6: Seguin Street P. S.
Type: Fairbanks Morse
Size: Two, 65.6 l/s @ 48.4 m TDH

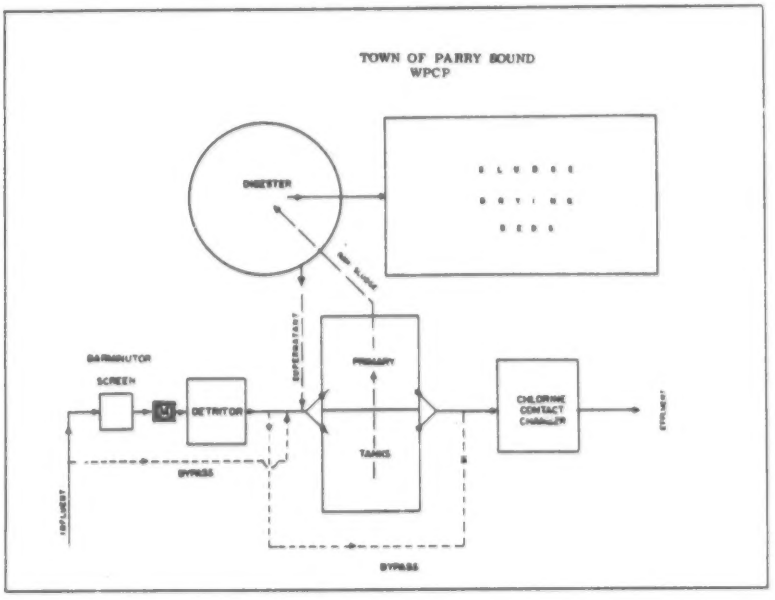
#7: Bay St. P.S.
Type: Flygt CP-3100
Size: One, 21.5 l/s @ 10.7m TDH

#8: St. Charles Crossing P.S.
Type: Smith & Loveless
Ejector Station
Size: One, 3.2 l/s @ 7.6m TDH

#9: Prospect St. P.S.
Type: Submersible
Size: Two, 20.8 l/s

#10: Waubeek St. P.S.
Type: Flygt submersible
Size: Two, 15.1 l/s

#11: Beaver Street P.S.
Type: Flygt submersible
Size: Two, 30.3 l/s



DESIGN DATA - IMPERIAL

PROJECT Town of Parry Sound WPCP

PROJECT NO. 2-0113-82

TREATMENT Primary

DESIGN FLOW 0.83 mgd

DESIGN POPULATION 7,500

BOD - Raw Sewage 250 mg/l
- Removal 35%

SS - Raw Sewage 200 mg/l
- Removal 35%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C (18")

Grit Removal

Type: Dorr Detritor
Size: One 10 X 10 X 1½'
Retention: 1.35 min

Primary Sedimentation

Type: Dorr
Size: Two 30' x 30' x 10' swd
(112,000 gallons)
Retention: 3.24 hr
Loading: Surface, 460 gal/ft^2/day
Weir: 3760 gal/ft/day

CHLORINATION

Type: W & T, Type A-731
Size: One 200 lb/day

Chlorine Contact Chamber

Size: One 25½ X 8½ X 9'
(11,150 gal)
Retention: 19.2 min

OUTFALL

- to McCurry Lake

SLUDGE HANDLING

Digestion System - single-stage

Type: Dorr draft tubes (2)
Size: One 35' dia x 20' 9" swd
(20,580 cu ft or 138,000 gal)

PUMPING STATIONS

#1: River Street P.S.
Type: Flygt CP-3100
Size: Two 100, usgpm at 25'tdh

#2: Birch Street P.S.
Type: Flygt submersible
Size: Two, 200 gpm

#3: Hawthorne Cres. P.S.
Type: Flygt CP-3100
Size: One, 80 usgpm at 31' tdh

#4: William Street P.S.
Type: Flygt CP-3100
Size: Two, 420 usgpm at 36' tdh

#5: Cascade Street P.S.
Type: Robert Morse (Weinman)
Size: Two, 210 usgpm at 41' tdh

#6: Seguin Street P.S.
Type: Fairbanks Morse
Size: Two, 1040 usgpm at 160' tdh

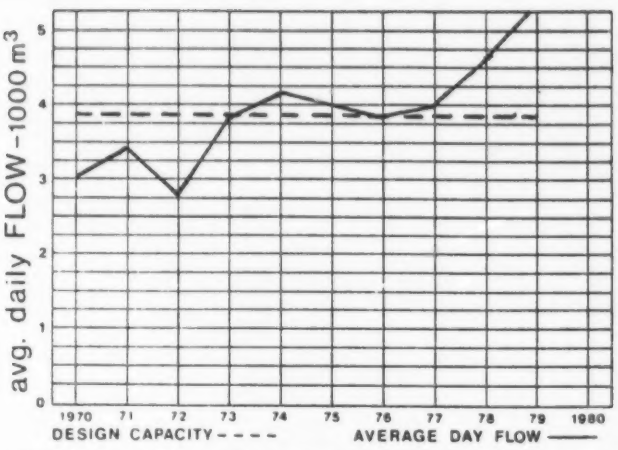
#7: Bay Street P.S.
Type: Flygt CP-3100
Size: One, 340 usgpm at 35' tdh

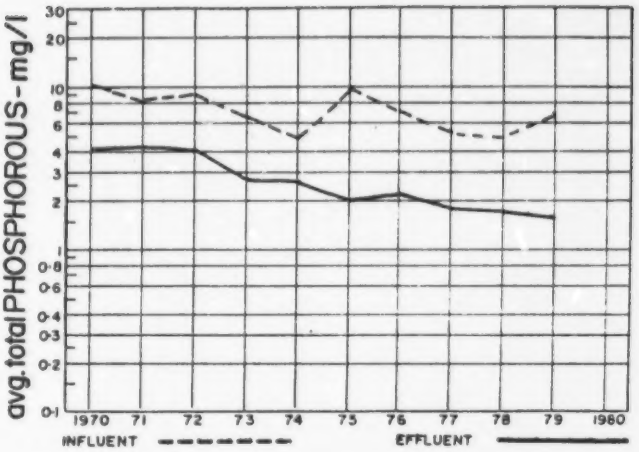
#8: St. Charles Crossing P.S.
Type: Smith & Loveless
Ejector Station
Size: One, 50 usgpm at 25' tdh

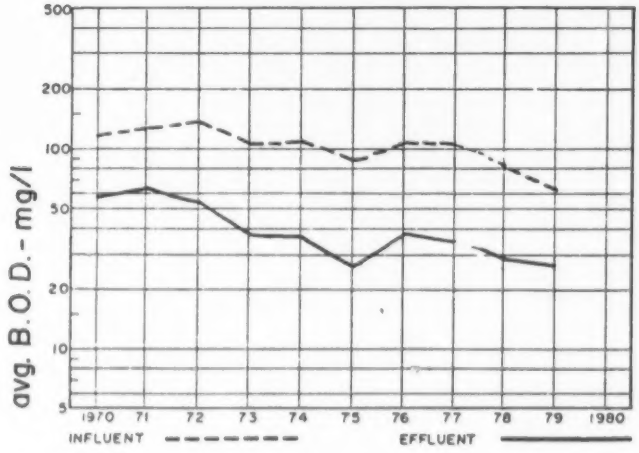
#9: Prospect St. P.S.
Type: Submersible
Size: Two, 275 gpm

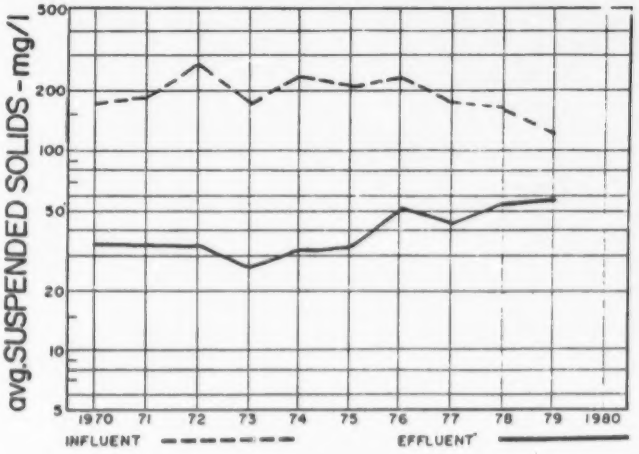
#10: Waubeek St. P.S.
Type: Flygt submersible
Size: Two, 200 gpm

#11: Beaver Street P.S.
Type: Flygt submersible
Size: Two, 400 gpm









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110000560 PARRY SOUND WPCP

MUNICIPALITY : PARRY SOUND
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 5,248
POPULATION SERVED : 5,500
PERCENT SERVED : 104.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.773 1000 M3 DESIGN BODS : 250.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	126.242	4.091	4.864	10.456	83.0	38.0	54	5.6	167.0	41.0	75	15.9	7.7	1.8	79	.770
FEB	112.741	4.046	6.819	12.729	143.0	36.0	74	12.0	233.0	52.0	77	20.4	9.8	2.0	79	.879
MAR	289.444	9.319	11.911	12.729	28.0	20.0	28	2.3	108.0	64.0	40	12.7	4.3	1.5	65	.810
APR	252.800	8.430	11.900	13.000	40.0	20.5	48	4.9	80.0	48.3	39	8.0	3.9	1.4	64	.632
MAY	195.470	6.310	10.380	12.700	43.0	21.5	50	4.2	93.0	36.0	61	11.1	6.5	1.8	71	.913
JUN	88.770	2.960	6.320	13.600	77.5	31.0	60	4.1	98.7	50.0	49	4.3	6.2	1.3	78	.437
JUL	149.180	4.810	5.820	12.700	49.0	28.0	42	3.1	121.0	45.0	62	11.3	9.3	1.7	81	1.134
AUG	150.430	4.850	6.670	11.800	51.0	18.0	64	4.9	102.9	29.9	70	10.9	7.0	1.8	74	.793
SEP	123.960	4.130	6.770	12.730	80.5	42.0	47	4.7	186.0	52.8	71	16.5	8.5	1.6	81	.859
OCT	180.480	5.820	9.900	12.700	66.0	38.0	42	5.0	102.0	45.6	55	10.1	7.8	1.7	77	1.085
NOV	185.160	6.170	8.850	13.200	52.0	23.0	55	5.3	79.2	55.5	29	4.3	7.4	1.7	78	1.042
DEC	206.040	6.650	9.360	13.600	32.5	27.0	16	1.1	80.6	36.4	54	9.1	5.9	2.1	64	.783
TOTAL	2060.717							57.7				135.0				10.117
AVERAGE		5.632			62.1	28.5	53		120.9	48.3	61		7.0	1.8	75	
MAXIMUM			11.911	13.600												
NO. OF SAMPLES					23	23			73	73			95	93		

DESIGN DATA - METRIC

SAULT STE. MARIE

PROJECT: City of Sault Ste Marie WPCP

PROJECT NO.: 2-0020-58

TREATMENT: Primary

DESIGN FLOW: 54.552 $10^3 m^3/d$

PRIMARY TREATMENT

COMMINUTION
Type: Six barminutors Model C
Size: 914.4mm

GRIT REMOVAL
Type: Detritors
Size: Two, each 5.49m x 5.49m x .38m swd
One, 7.32m x 7.32m x 1.22m swd
Volume (total): 88.19m^3
Retention: 3.4 min.

PRIMARY SEDIMENTATION
Size: Four, each 21.34m dia. x 2.44m swd
Two, each 24.38m dia. x 2.44m swd
Volume (total) 5.778 $10^3 m^3/d$
Retention: 3.8 hr.

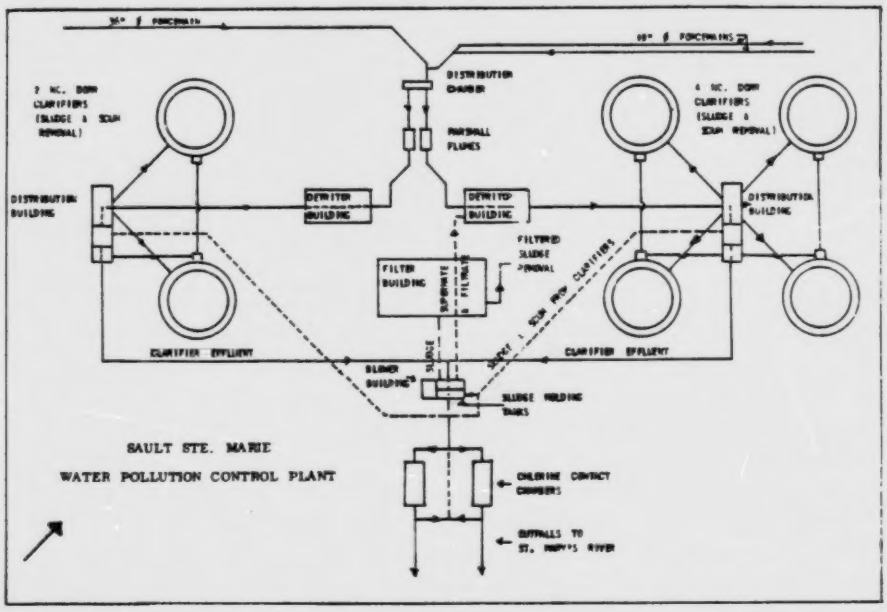
CHLORINATION
Type: Wallace and Tiernan
Size: One, 680.4 kg/day
One, 22.7 kg/day

CHLORINE CONTACT CHAMBER
Size: One, 18.29m x 6.10m x 3.66m
One, 22.86m x 13.72m x 5.03m
Volume (total): 2804.9 m^3
Retention: 1.9 min

SLUDGE HANDLING

HOLDING TANKS
Size: Two, each 7.32m x 4.57m x 3.51m
Volume (total): 235.028m^3

VACUUM FILTER
Type: Two, each, 18.58 m^2 area



DESIGN DATA - IMPERIAL

PROJECT: City of Sault Ste Marie WPCP

PROJECT NO. 2-0020-58

TREATMENT: Primary

DESIGN FLOW: 12 mgd

BOD - 375 mg/l

SS - 300 mg/l

PRIMARY TREATMENT

COMMINUTION
Type: Six barminutors Model C
Size: 36"

GRIT REMOVAL
Type: Detritors
Size: Two, each 18' x 18' x 1.25' swd
One, 24 x 24' x 4 swd
Volume (total): 19,400 gal
Retention: 3.4 min

PRIMARY SEDIMENTATION
Size: Four, each 70' dia x 8' swd
Two, each 80' dia x 8' swd
Volume (total): 1.271 M.G.
Retention: 3.8 hr

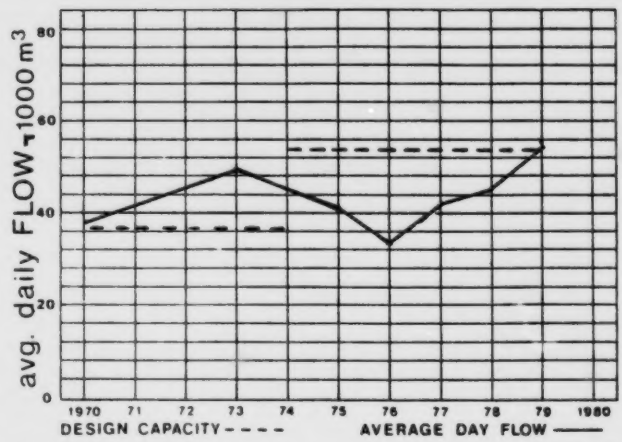
CHLORINATION
Type: Wallace and Tiernan
Size: One, 1500 lb/day
One, 500 lb/day

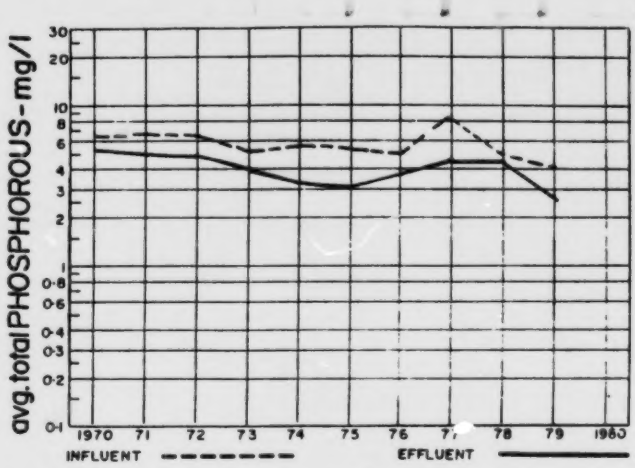
CHLORINE CONTACT CHAMBER
Size: One, 60' x 20' x 12'
One, 75' x 45' x 16.5'
Volume (total): 617,000 I.Gal
Retention: 1.9 min

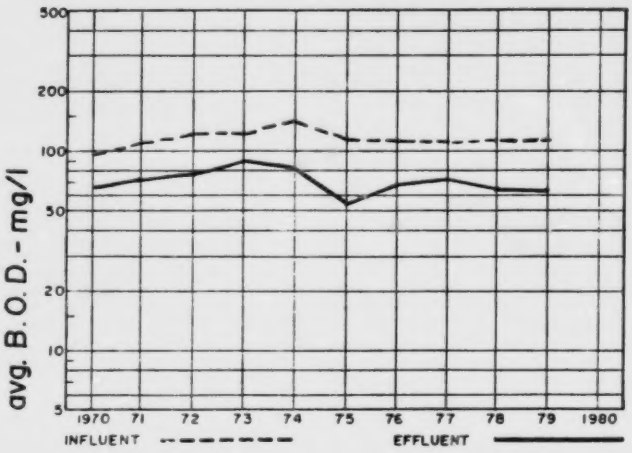
SLUDGE HANDLING

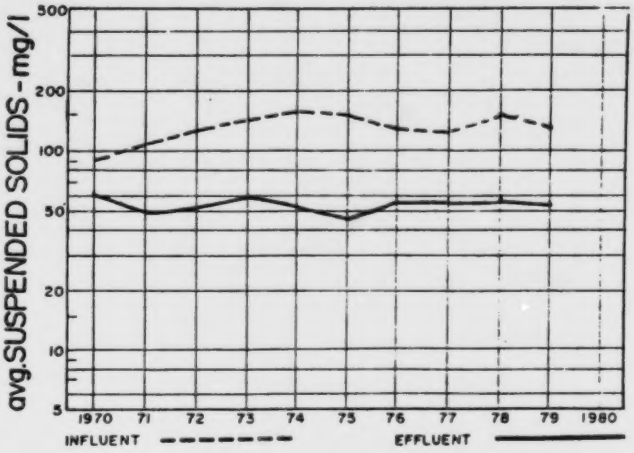
HOLDING TANKS
Size: Two, each 24' x 15' x 11.5'
Volume (total): 51,700 I.Gal

VACUUM FILTER
Type: Two, each 200 ft^2 area









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000640 SAULT STE.MARIE WPCP

MUNICIPALITY : SAULT STE MARIE
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 80,524
POPULATION SERVED : 72,000
PERCENT SERVED : 89.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 54.552 1000 M3 DESIGN BOD5 : 376.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	1509.272	48.642	36.823	56.825	135.0	60.6	55	112.2	131.0	51.3	60	120.2	(DATA NOT AVAILABLE)			
FEB	894.562	31.913	38.414	50.006	163.0	69.0	57	84.0	143.0	55.0	61	78.7				
MAR	2328.597	75.100	153.200	156.837	116.0	50.0	56	153.6	114.0	45.0	60	160.6				
APR	2804.800	90.050	137.200	149.600	88.6	43.8	50	125.6	117.2	43.8	62	205.8	4.2	2.8	33	3.927
MAY	1519.800	49.020	61.100	83.900	90.7	60.2	33	46.3	129.8	49.0	62	122.4	4.0	2.8	30	1.824
JUN	1525.000	50.830	93.200	135.200	94.0	54.5	42	60.2	156.0	50.6	67	160.7				
JUL	1594.200	51.410	90.300	154.400	104.0	62.6	39	66.0	145.0	56.5	61	141.0				
AUG	1503.100	48.470	83.700	163.400	89.7	43.0	52	70.2	146.2	62.6	57	125.6				
SEP	1204.300	40.150	56.500	122.500	127.5	57.5	54	84.3	141.0	53.0	62	105.9				
OCT	1722.200	55.500	135.600	152.000	159.0	77.0	51	141.2	157.0	53.0	66	179.1				
NOV	1868.300	62.270	118.300	145.200	184.0	97.3	47	181.9	131.5	47.5	63	156.9				
DEC	1435.500	46.290	67.100	90.800	151.0	76.0	49	107.6	155.0	41.0	73	163.6				
TOTAL	19909.631							1213.7				1721.2				5.751
AVERAGE		54.137			125.2	62.6	49		138.8	50.6	63		4.1	2.8	31	
MAXIMUM			153.200	163.400												
NO. OF SAMPLES					53	53			105	105			2	2		

DESIGN: METRIC

PROJECT: City of Timmins WPCP

PROJECT NO: 2-0071-80

TREATMENT: Primary

DESIGN FLOW: 34.09 $10^3 m^3/d$

DESIGN POPULATION: 30,000

BOD - Raw Sewage 180 mg/l
- Removal 35-40%

SS - Raw Sewage 200 mg/l
- Removal 60-65%

RAW SEWAGE PUMPS

Screening

Type: Manually cleaned
Size: 44.5mm openings

Pumps

Type: Worthington
Size: One 276.3 l/s @ 7.9 tdh
One 236.2 l/s @ 7.9 tdh
One 236.2 l/s @ 7.9 tdh (diesel)

PRIMARY TREATMENT

Comminution

Type: Chicago Pump Barminutor
Size: One Model C (914.4mm)

Grit Removal

Type: Aerated
Size: One 4.0 m x 5.7 m x 3.81 m ($86.4 m^3$)
Retention: 9.1 min
Air Supply: Two Sutorbilt

Primary Sedimentation

Type: Jeffrey
Size: Two 38.1 m x 6.1 m x 3.7 m (avg.) ($1,700 m^3$)
Retention: 3.0 hr.
Loading: Surface 29.3 $m^3/m^2 \cdot d$
Weir, 414.8 $m^3/m \cdot d$

CHLORINATION

Type: F & P
Size: One 90.72 kg/d

Chlorine Contact Chamber

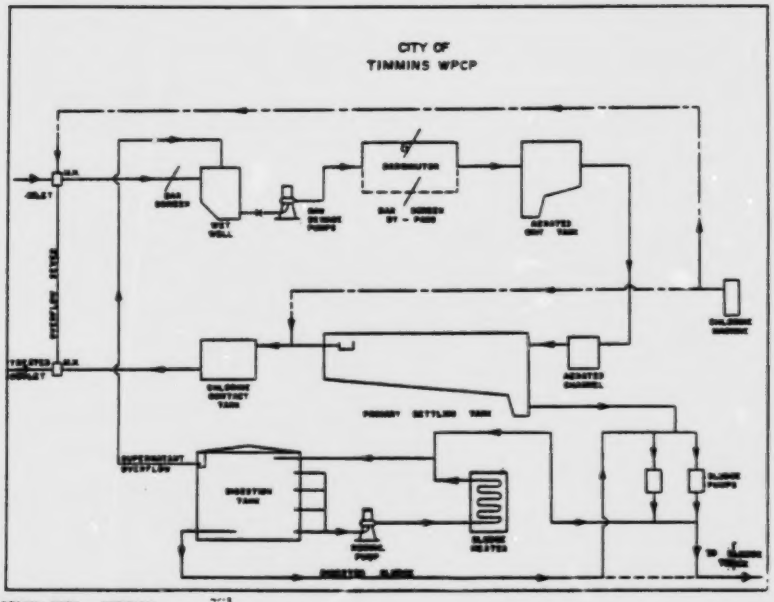
Size: Two 14.5 m x 2.1 m x 2.9 m ($170.0 m^3$)
Retention: 19 min

OUTFALL

To Mattagami River

SLUDGE HANDLING

Digestion System - single-stage, concrete
Type: PFT (gas mixed)
Size: One 19.8 m dia x 7.3 m swd ($2285.6 m^3$)
Loading: 21.5 $kg/m^3/mo$.



DESIGN DATA - IMPERIAL

PROJECT City of Timmins WPCP

PROJECT NO.	2-0071-80
TREATMENT	Primary
DESIGN FLOW	7.5 mgd
DESIGN POPULATION	30,000
BOD - Raw Sewage	180 mg/l
- Removal	35-40%
SS - Raw Sewage	200 mg/l
- Removal	60-65%

RAW SEWAGE PUMPS

Screening

Type: Manually Cleaned
Size: 1 3/4" openings

Pumps

Type: Worthington
Size: One 3850 gpm @ 26' tdh
One 3120 gpm @ 26' tdh
One 3120 gpm @ 26' tdh (diesel)

PRIMARY TREATMENT

Comminution

Type: Chicago Pump Barminutor
Size: One Model C (36")

Grit Removal

Type: Aerated
Size: One 13' x 18 3/4' x 12½'
(19,000 gal)
Retention: 9.1 min
Air Supply: Two Sutorbilt

Primary Sedimentation

Type: Jeffrey
Size: Two 125' x 20' x 12' (avg)
(374,000 gal)
Retention: 3.0 hr
Loading: Surface, 800 gal/ft^2/day
Weir, 9900 gal/ft/day

CHLORINATION

Type: F & P
Size: One 200 lb/day

Chlorine Contact Chamber

Size: Two 47½' x 7' x 9'7"
(37,400 gal)
Retention: 19 min

OUTFALL

To Mattagami River

SLUDGE HANDLING

Digestion System - single-stage, concrete
Type: PFT (gas mixed)
Size: One 65' dia x 24' swd (80,000 cu ft or 0.60 mil gal)
Loading: 1.35 lb/cu ft/mo

Ministry of the Environment

Ontario

Northwestern Region

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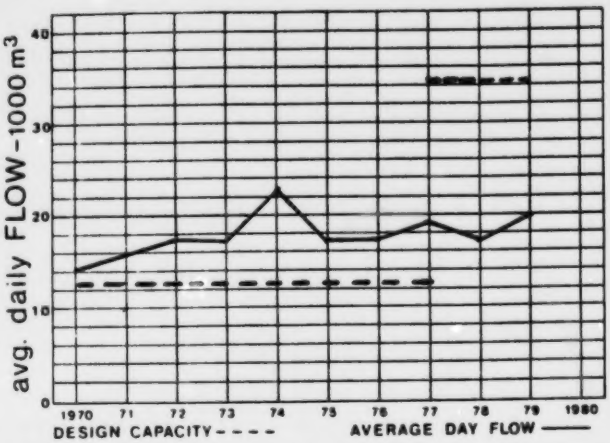
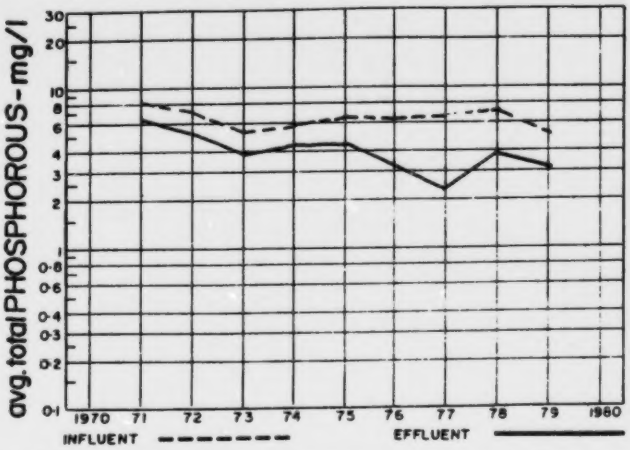
REGIONAL OFFICE

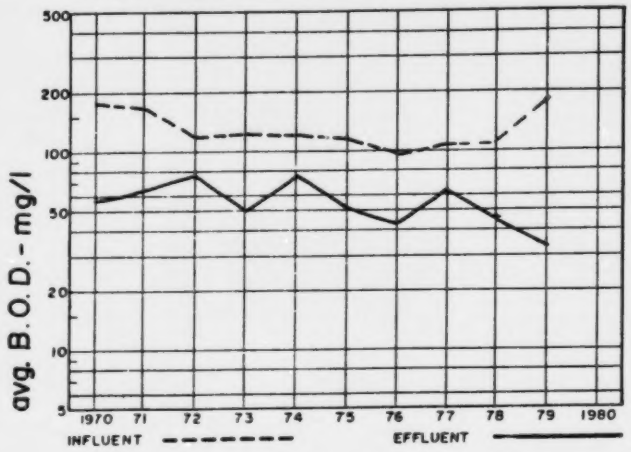
THUNDER BAY
435 James St. S.
P.O. Box 5000
807-475-1205

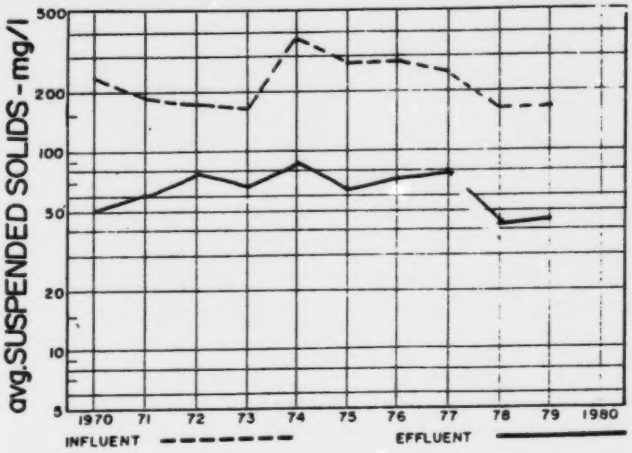
DISTRICT OFFICE

Kenora
808 Robertson St.
807-468-5578









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000766 MATTAGAMI W P C P (OPERATION TO MUNICIPALITY IN 1980)

MUNICIPALITY : TIMMINS (MATTAGAMI)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : PRIMARY

* DATA NOT AVAILABLE

CURRENT POPULATION 44,251
POPULATION SERVED
PERCENT SERVED

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 34.095 1000 M3 DESIGN BOD5 : 180.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	500.560	16.138	28.640	35.913	93.0	93.0			286.0	58.0	79	114.1	7.7	5.3	31	1.201
FEB	414.141	14.774	16.775	30.004	110.0	50.0	54	24.8	80.0	35.0	56	15.6	4.7	4.6	2	.041
MAR	574.523	18.548	31.822	37.277	80.0	32.0	46	16.0	259.0	99.0	61	91.9	3.7	*		
APR	915.000	30.500	50.700	70.000	50.0	16.0	68	31.1	181.5	41.3	77	128.2	4.0	.9	77	2.818
MAY	700.400	22.600	28.100	40.000	70.0	11.0	84	41.3	220.5	51.0	76	118.7	5.2	*		
JUN	672.300	22.400	43.900	80.000	72.0	16.0	77	37.6	157.0	26.0	83	88.0	4.6	1.1	76	2.353
JUL	545.200	17.600	26.400	32.000	24.0	*			174.6	41.4	76	72.6	4.0	3.7	7	.164
AUG	770.800	24.900	31.400	50.000	155.0	20.0	87	104.0	139.0	52.0	62	67.0	4.5	1.6	64	2.235
SEP	659.400	22.000	28.800	60.000	44.0	18.0	59	17.1	116.0	30.0	74	56.7	5.7	3.2	43	1.649
OCT	643.800	20.800	34.900	43.000	60.0	37.0	38	14.8	101.7	37.0	63	41.6	5.4	2.2	59	2.080
NOV	497.700	16.600	21.100	32.000	48.0	14.0	69	15.9	128.0	54.0	57	36.8	7.0	2.3	67	2.339
DEC	440.100	14.200	16.000	30.000	110.0	55.0	50	24.2	140.6	34.7	75	46.6	5.6	7.1	-	-
TOTAL	7333.924							327.1				881.2				14.880
AVERAGE		20.088			74.5	32.9	55		165.3	46.6	71		5.1	3.2	38	
MAXIMUM			50.700	80.000												
NO. OF SAMPLES					13	12			44	44			13	11		

Northwestern Region

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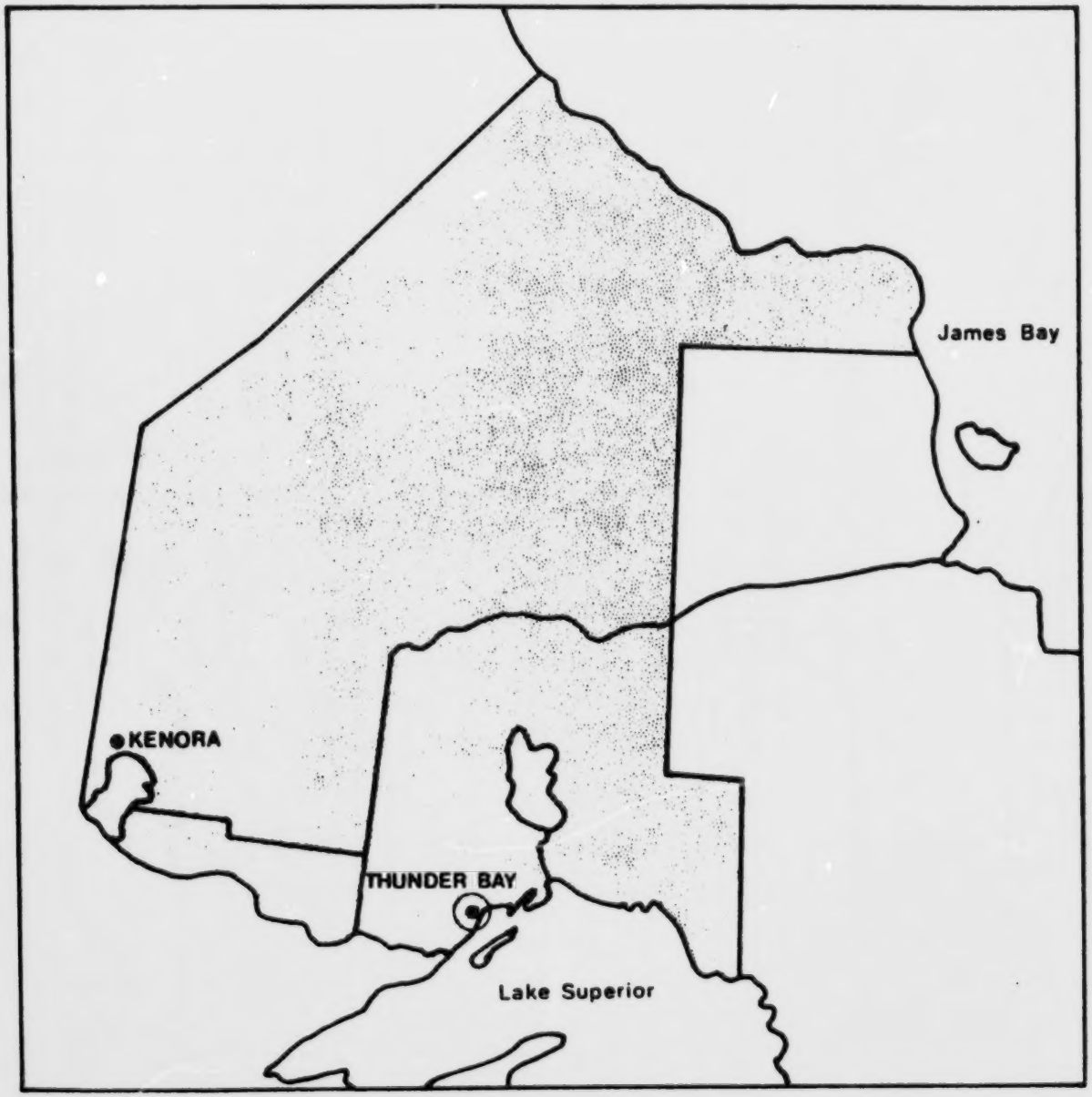
Ministry of the Environment

Ontario



DESIGN DATA - METRIC

FORT FRANCES

PROJECT Town of Fort Frances WPCP

PROJECT NO 2-0059-60

TREATMENT Primary

DESIGN FLOW 9.1 $10^3 m^3/d$

DESIGN POPULATION 12,000

BOD - Raw Sewage 130 mg/l
- Removal 40%

SS - Raw Sewage 180 mg/l
- Removal 60%

PRIMARY TREATMENT

Screening

- Coarse bar screen (50.8mm)

Comminution

Type: Smith & Loveless Model 15R

Grit Removal

Type: Aerated; grit removed by clamshell bucket
Size: One 3.2m x 3.2m x4.2m swd
Volume: 42.9 m^3
Retention: 6.8 min

Air Supply

Type: Roots-Connersville
Size: One 83.6 l/s @ 62.1 kPa

Primary Sedimentation

Type: Eimco Process
Size: Two 12.2m x 12.2m x 3.0m swd
Volume: 906.2 m^3
Retention: 2.4 hours

Loading: Surface, 30.6 $m^3/m^2.d$
Weir, 143.9 $m^3/m.d$

CHLORINATION

Type: W & T Model A-731
Size: 181.4 kg/d

Chlorine Contact Chamber

Size: 8.23m x 6.1m x 2.6m
Volume: 130m^3
Retention: 20.6 min

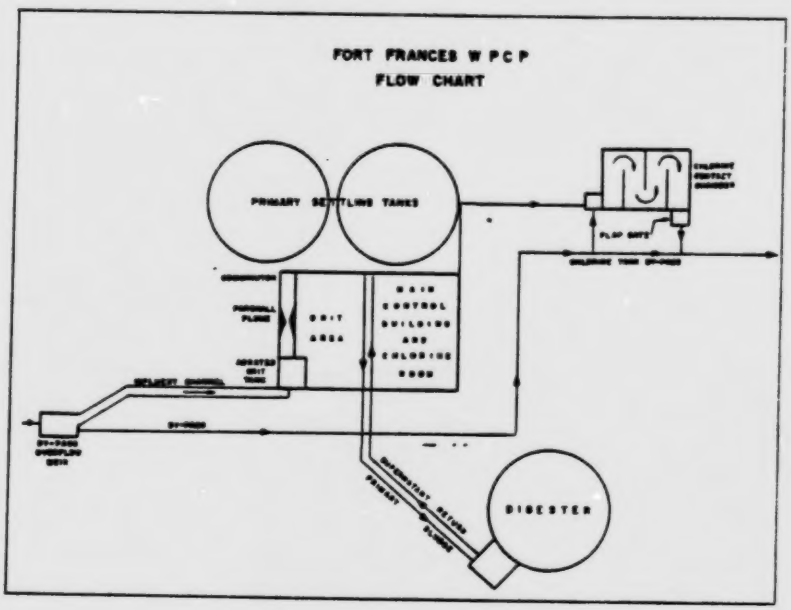
OUTFALL

- to Rainy River

SLUDGE HANDLING

Digestion System

Type: Single stage with floating cover, gas mixed
Size: One 12.2m x 7.6m swd (892 m^3)
Loading: 22.6 kg/m^3/MO
Mixer: Roots-Connersville Type IA



DESIGN DATA - IMPERIAL

PROJECT Town of Fort Frances WPCP

PROJECT NO.	2-0059-60	
TREATMENT	Primary	
DESIGN FLOW	2.0 mgd	
DESIGN POPULATION	12,000	
BOD - Raw Sewage - Removal	130 mg/l 40%	
SS - Raw Sewage - Removal	180 mg/l 60%	

PRIMARY TREATMENT

Screening

- Coarse bar screen (2")

Comminution

Type: Smith & Loveless Model 15R

Grit Removal

Type: Aerated, grit removed by clamshell bucket
Size: One 10' 5" x 10' 5" x 13' 9" swd (1515 cu ft or 9,400 gal)
Retention: 6.8 min

Air Supply

Type: Roots-Connersville
Size: One 166 scfm @ 9 psi

Primary Sedimentation

Type: Eimco Process
Size: Two 40' x 40' x 10' swd (32,000 cu ft or 200,000 gal)
Retention: 2.4 hours

Loading: [illegible] gal/ft²/day
Weir, 9,[illegible] gal/ft/day

CHLORINATION

Type: W & T Model A-731
Size: 400 lb/day

Chlorine Contact Chamber

Size: 27' x 20' x 8.5' (avg)
(4,500 cu ft or 28,600 gal)
Retention: 20.6 min

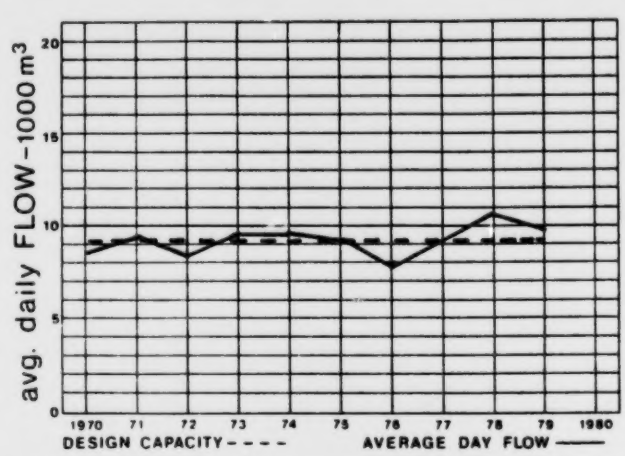
OUTFALL

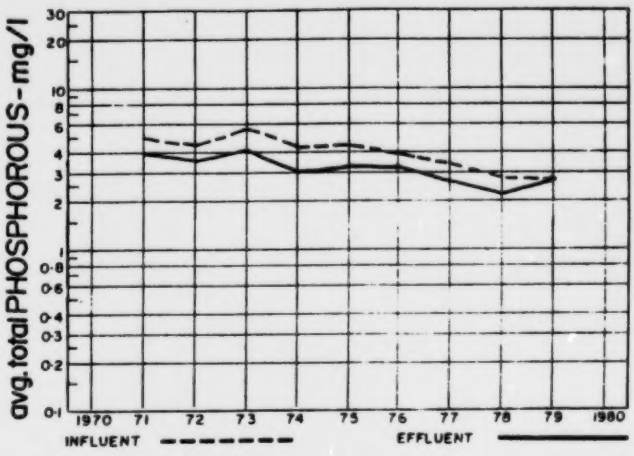
- to Rainy River

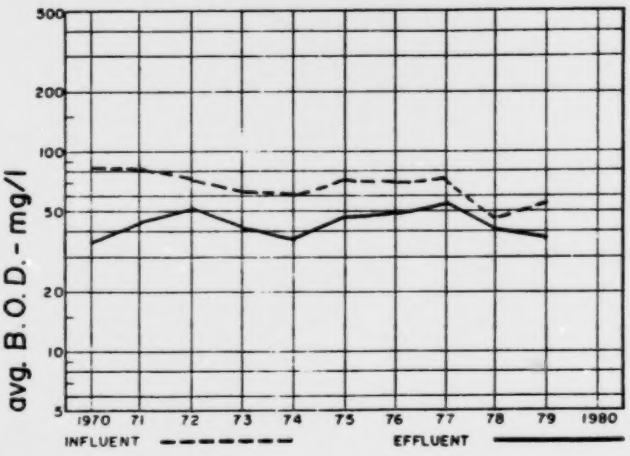
SLUDGE HANDLING

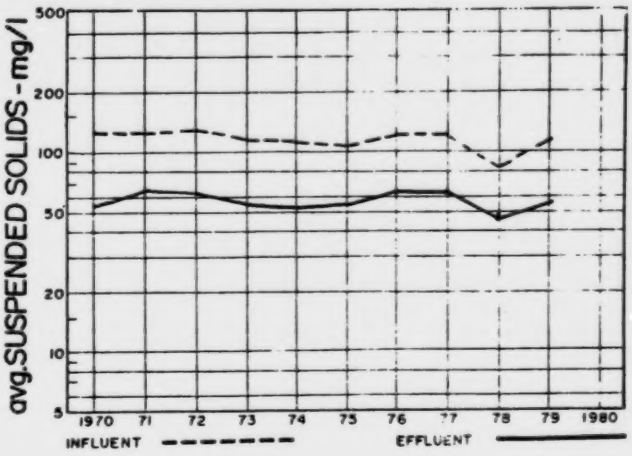
Digestion System

Type: Single stage with floating cover, gas mixed
Size: One 40' dia x 25' swd (31,500 cu ft or 195,500 gal)
Loading: 1.3# lb/cu ft mo
Mixer: Roots-Connersville Type AA









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER . 110000258 FORT FRANCES MPCP

MUNICIPALITY . FORT FRANCES
REGION . 06 NORTHWESTERN

TREATMENT FACILITY . PRIMARY

CURRENT POPULATION : 9,088
POPULATION SERVED : 8,800
PERCENT SERVED : 96.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 9.092 1000 M3 DESIGN BOD5 : 130.0 MG/L DESIGN SUSP.SOLIDS : 180.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION				REDUCTION				REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	259.576	8.373	9.092	13.638	47.0	37.0	21	2.5	90.0	47.8	46	10.9	3.1	2.6	16	.130
FEB	242.756	8.669	9.546	11.365	43.0	36.7	14	1.5	122.0	50.3	58	17.4	4.3	3.2	25	.267
MAR	300.945	9.707	12.728	16.820	39.0	32.5	16	1.9	128.0	49.5	61	23.6	3.1	2.6	16	.150
APR	411.860	13.720	20.000	26.360	38.0	26.6	30	4.5	134.6	70.0	47	26.6	2.8	2.6	7	082
MAY	388.226	11.878	13.201	27.276	40.0	38.0	5	.7	100.8	58.6	41	15.5	1.9	2.2	-	-
JUN	367.771	12.259	17.729	27.276	40.0	32.0	20	2.9	122.5	53.5	56	25.3	2.8	2.2	21	.221
JUL	310.037	10.001	11.820	16.820	38.0	32.0	15	1.8	107.2	48.4	54	18.2	3.2	2.6	18	188
AUG	283.670	9.151	11.365	18.639	90.0	50.0	44	11.3	107.3	54.0	49	15.1	4.1	4.0	2	028
SEP	268.214	8.946	10.001	12.274	40.0	35.0	12	1.3	169.5	48.0	71	32.5	3.6	3.0	16	.161
OCT	276.851	8.930	14.092	23.185	75.0	50.0	33	6.9	119.0	62.8	47	15.5		3.4		
NOV	273.215	9.107	11.820	13.183	38.0	28.0	26	2.7	110.5	49.0	55	16.8	2.6	2.2	15	109
DEC	253.667	8.183	8.637	10.001	120.0	58.0	51	15.7	127.0	63.0	50	16.2	4.3	3.0	30	330
TOTAL	3616.788							54.3				234.0				1 684
AVERAGE		9.910			54.0	37.9	29		119.8	54.5	54		3.2	2.8	13	
MAXIMUM			20.000	27.276												
NO. OF SAMPLES					20	20			50	50			18	11		

CONVENTIONAL SECONDARY TREATMENT PLANTS

Ministry of the Environment
Ontario

Southwestern Region

(1)

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Southwestern Region

(1)

Ontario

Ministry of the Environment

DESIGN DATA - METRIC

PROJECT: City of Chatham WPCP

PROJECT NO: 2-0102-82

TREATMENT: Activated Sludge

DESIGN FLOW: 20 457 $10^3 m^3/d$

DESIGN POPULATION: 45,000

BOD - Raw Sewage: 250 mg/l
- Removal: 90%

SS - Raw Sewage: 250 mg/l
- Removal: 90%

RAW SEWAGE

Screening

- One manually cleaned bar screen

Pumps

Type: Worthington
Size: Three 283.88 l/s at 14.33m TDH
One 283.88 l/s at 14.33m TDH
(Electric & standby diesel)

PRIMARY TREATMENT

Grit Removal

Type: Aerated with clamshell bucket
Size: One 8.23m x 4.27m x 11.67m (avg.)
Volume: 124.788 m^3
Retention: 8.8 min
Air Supply: One Sutorbilt

Comminution

Type: Barminutor
Size: Two Model C

Primary Sedimentation

Type: Jeffrey, two-pass
Size: Two 24.38m x 9.75m x 3.66m (avg)
Volume: 1736.572 m^3
Retention: 2.05 hr
Loading: Surface, 4 924 $m^3/m^2 \cdot d$
Weir, 140 Ob $m^3/m \cdot d$

SECONDARY TREATMENT

Aeration Tanks

Type Diffused air, triple pass
Size Two 39.62 m_3x19.20 m x 4.27m
Volume 6.501 $10^3 m^3$
Retention 7.6 hr

Diffusers

Type: Schumacher tubes
125 per pass on 304.8 mm centres

Air Supply

Type Sutorbilt
Size Three 1044.7[illegible] l/s

Secondary Sedimentation

Type Jeffrey
Size Two 36.58m x 9.75m x 3.6m (avg)
Volume 2600 404 m^3
Retention 3.08 hours
Loading: Surface, 28.65 $m^3/m^2 \cdot d$
Weir, 130.80 $m^3/m^2 \cdot d$

CHLORINATION

Type F & P
Size One 9[illegible].70 kg/d
One 181.44 kg/d

Chlorine Contact Chamber

Size One 10.24m x 9.14m x 3.05m
Volume 283.22 m^3
Retention 22 min

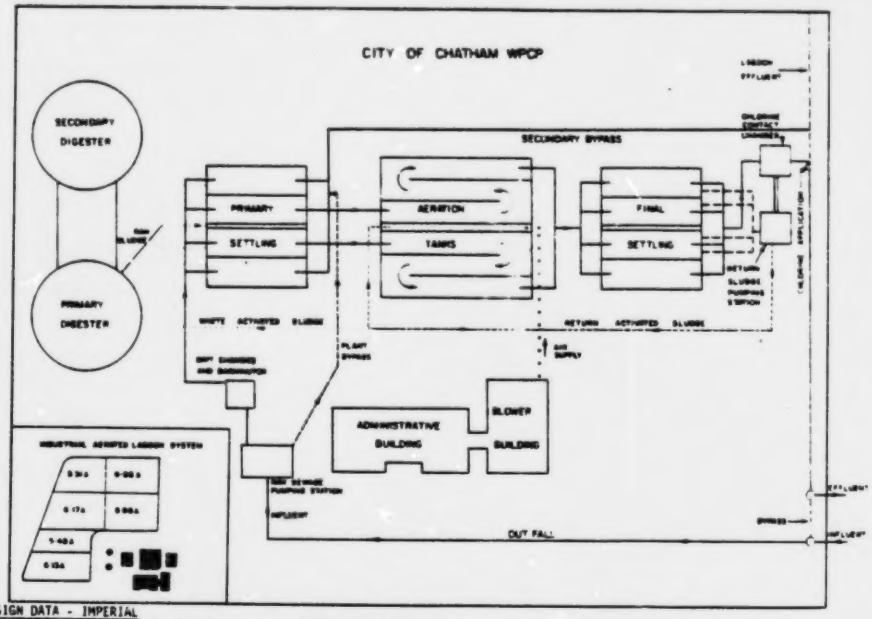
OUTFALL

312.42 m to Thames River

SLUDGE HANDLING

Digestion System - Two-stage
Primary--
Type Gas mixed, fixed cover
Size One 19.81m dia x 7.62 m
Volume 2.36 $10^3 m^3$

Secondary--
Type Fixed cover
Size One 19.81m dia x 7.62 m
Volume 2.327 $10^3 m^3$



DESIGN DATA - IMPERIAL

PROJECT City of Chatham WPCP

PROJECT NO. 2-0102-82

TREATMENT Activated Sludge

DESIGN FLOW 4.5 mgd

DESIGN POPULATION 45,000

BOD - Raw Sewage: 250 mg/l
- Removal: 90%

SS - Raw Sewage: 250 mg/l
- Removal: 90%

RAW SEWAGE

Screening

- One manually cleaned bar screen

Pumps

Type: Worthington
Size: Three 3750 gpm @ 47' tdh
One 3750 gpm @ 47' tdh
(electric & standby diesel)

PRIMARY TREATMENT

Grit Removal

Type: Aerated, with clamshell bucket
Size: One 27' x 14' x 11 2/3 (avg)
(27,450 gal)
Retention: 8.8 min
Air Supply: One Sutorbilt

Comminution

Type: Barminutor
Size: Two Model C

Primary Sedimentation

Type: Jeffrey, two-pass
Size: Two 80' x 32' x 12' (avg)
(382,000 gal)
Retention: 2.05 hr
Loading: Surface, 878 gal/ft^2/day
Weir, 9400 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air; triple pass
Size: Two 130' x 63' x 14'
(1.43 mil gal)
Retention: 7.6 hr

Diffusers

Type: Schumacher tubes
125 per pass on 12" centres

Air Supply

Type: Sutorbilt
Size: Three 2500 cfm

Secondary Sedimentation

Type: Jeffrey
Size: Two 120' x 32' x 12' (avg)
(574,000 gal)
Retention: 3.08 hours
Loading: Surface, 586 gal/ft^2/day
Weir, 4740 gal/ft/day

CHLORINATION

Type: F & P
Size: One 2000 lb/day
One 400 lb/day

Chlorine Contact Chamber

Size: One 33.6' x 30' x 10' (62,300 gal)
Retention: 22 min

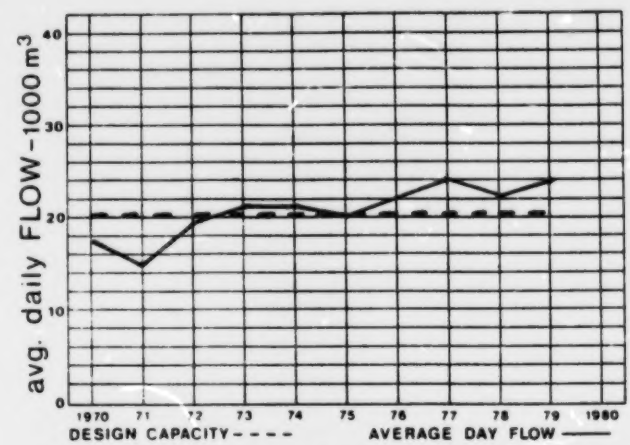
OUTFALL

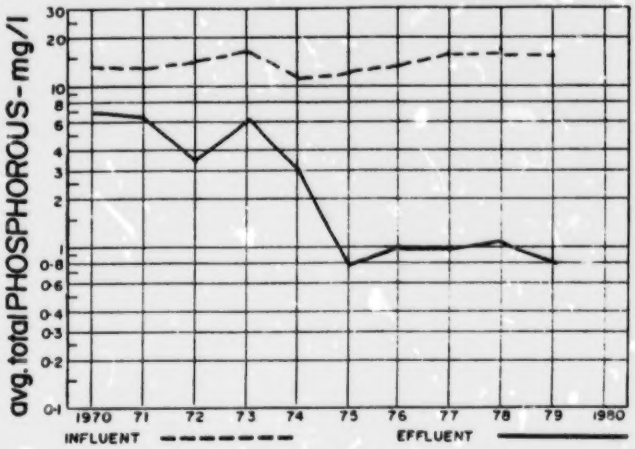
- 1,025' to Thames River

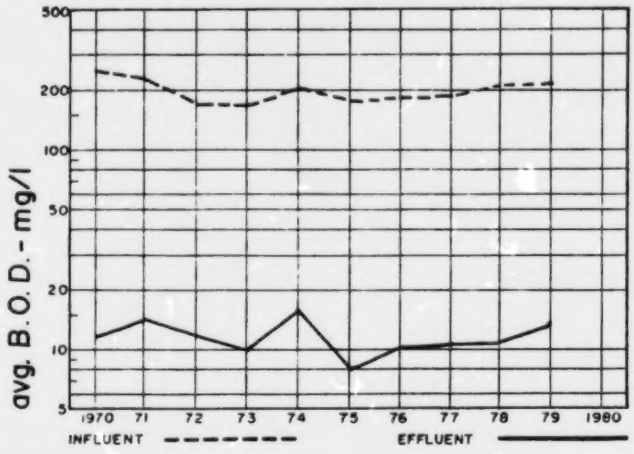
SLUDGE HANDLING

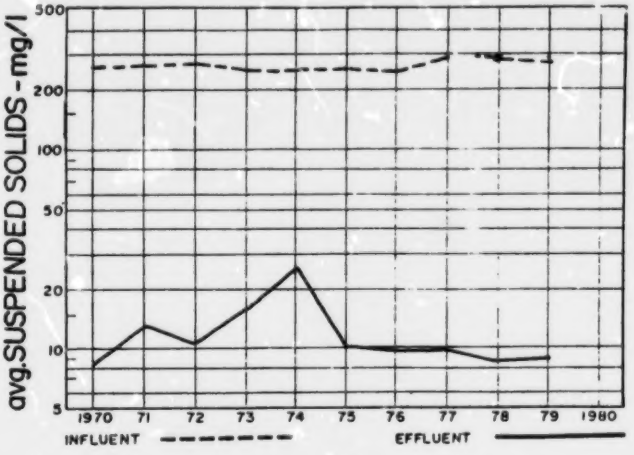
Digestion System - Two-stage
Primary--
Type: Gas mixed, fixed cover
Size: One 65' dia x 25' (83,000 cu ft or 0.62 mil gal)

Secondary--
Type: Fixed cover
Size: One 65' dia x 25' (82,000 cu ft or 0.61 mil gal)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000098 CHATHAM WPCP (OPERATION TO MUN. JUL 78)

MUNICIPALITY : CHATHAM
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION 39,960
POPULATION SERVED 39,960
PERCENT SERVED 100.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 20.457 1000 M3 DESIGN BOD5 : 250.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	596.889	19.254	29.094	70.917	214.0	13.0	93	119.9	289.0	8.0	97	167.7	15.7	.8	94	8.894
FEB	551.884	19.710	60.916	90.011	258.0	12.0	95	135.7	288.0	9.8	96	153.5	17.9	.8	95	9.437
MAR	828.736	26.733	69.099	87.300	218.0	15.0	93	169.2	315.0	9.1	97	253.5	12.1	.7	94	9.448
APR	1161.200	38.700	83.700	89.100	136.0	20.0	85	134.6	236.0	9.6	95	262.8	12.4	.8	92	13.389
MAY	689.440	22.240	48.600	81.800	207.0	13.5	93	133.4	286.0	10.7	96	189.8	16.2	.8	95	10.617
JUN	535.500	17.900	28.200	80.900	224.0	15.0	93	111.9	309.0	16.0	94	156.9	16.6	1.2	92	8.247
JUL																
AUG																
SEP																
OCT																
NOV																
DEC																
TOTAL	4363.649							803.9				1184.3				80.032
AVERAGE		24.090			209.5	14.7	92		287.1	10.5	96		15.1	.8	94	
MAXIMUM			83.700	90.011												
NO. OF SAMPLES					21	21			84	84			24	24		

DESIGN DATA - METRIC

PROJECT: Town of Ingersoll WPCP
PROJECT NO: 1-00/6-67
TREATMENT: Conventional Activated Sludge
DESIGN FLOW: 10.26 10^3m^3/d
(Old Plant 3.41 10^3m^3/d)
New plant 6.82 10^3m^3/d
BOD: Raw sewage 200 mg/l
SS: Raw sewage 200 mg/l

PRETREATMENT (Common)

BAR SCREENS:

Manually cleaned, in wet well influent channel

RAW SEWAGE PUMPING
Two, size 70.67 l/s - variable-speed
Two, size 141.34 l/s - variable speed

COMMINUTION:

One comminutor, Capacity 30.69 10^3m^3

GRIT REMOVAL:

Aerated grit tank
Size: 3.6m x 4.3m x 3.5m swd
Volume: 47.67 m^3 Detention: 1.8 min.

OLD PLANT

PRIMARY SEDIMENTATION:

Two, each 3.7m x 12.2m x 3.05m swd (avg)
Volume: 272.76 m^3 Detention: 1.9 hours
Overflow rate: 38.1 $m^3/m^2 \cdot d$

AERATION TANKS:

Two, each 9.1m x 16.5m x 4.6m swd (avg)
Volume: 1363.80 m^3 Detention: 9.7 hours
Fine bubble diffusion
Blowers: Two, size: each 319.3 l/s at 51.7 kPa

SECONDARY SEDIMENTATION:

Two, 4.6m x 13.2m x 3.7m swd (avg)
Volume: 454.6 m^3 Detention: 3.2 hours
Overflow rate: 26.89 $m^3/m^2 \cdot d$

INGERSOLL

CHLORINE CONTRACT CHAMBER:

Size: 5.5m x 3.7m x 3.4m swd
Volume: 59.10 10^3m^3 Detention: 25 min.

SLUDGE HOLDING TANK:
Size: 3.4m x 7.6m x 3.8m swd
Volume: 100.01 m^3

NEW PLANT

PRIMARY SEDIMENTATION:

Two, 4.9m x 19.8m x 3.4m swd (avg)
Volume: 645.53 10^3m^3
Detention: 2.3 hours
Overflow rate: 35.2 $m^3/m^2 \cdot d$

AERATION TANKS

Two, each with two cells 9.1 m square x 4.0m swd
Volume: 1227.42 m^3
Detention: 4.3 hours

CONDARY SEDIMENTATION:

Two, each 14.9m x 23.8m x 3.7m swd
Volume: 850.10 m^3
Detention: 3 hours
Overflow rate: 29.33 $m^3/m^2 \cdot d$

CHLORINE CONTACT CHAMBER:

Size: 8.1m x 7.3m x 3.1m swd
Volume: 18.64 m^3
Detention: 35 min.

SLUDGE HANDLING (Common)

PRIMARY DIGESTER:

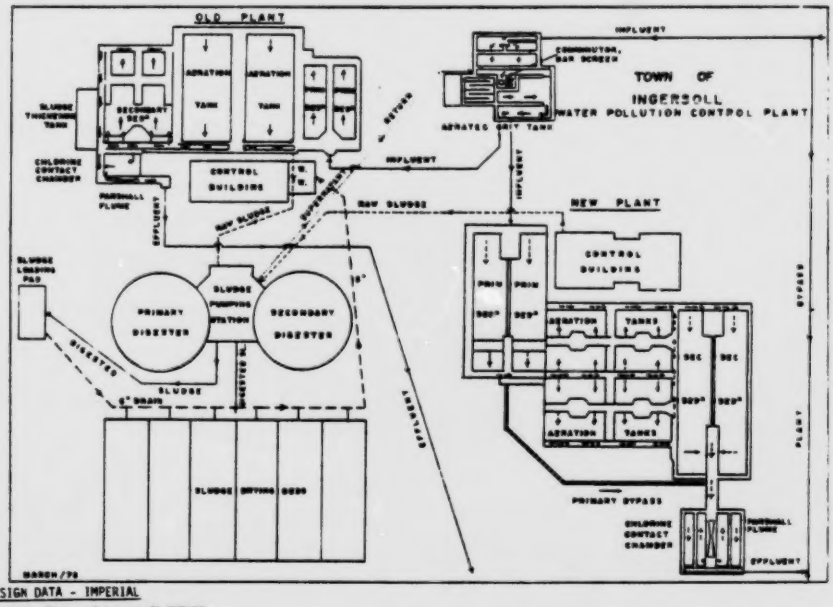
Size 13.7m dia. x 6.5m swd
Volume: 1019.52 m^3

SECONDARY DIGESTER:

Size: 13.7m dia x 7.6 m
Volume: 177.29 m^3

SLUDGE DRYING BEDS

Size:six, each 6.1m x 22.9m
Area: 836.1 m^2



DESIGN DATA - IMPERIAL

Project Town of Ingersoll WPCP
Project No: 1-0076-67
Treatment: Conventional Activated Sludge
Design Flow: 2.25 MGD
(Old Plant 0.75 MGD -
New plant 1.5 MGD)
BOD: Raw sewage 200 mg/l
SS: Raw sewage 200 mg/l

PRETREATMENT (Common)

BAR SCREENS:
Manually cleaned, in wet well influent channel

RAW SEWAGE PUMPING:
Two, size 1120 USGPM - variable-speed
Two, size 2240 USGPM - variable speed

COMMINUTION:
One comminutor, Capacity 6.75 MGD

GRIT REMOVAL:
Aerated grit tank
Size: 11'8" x 14' x 10' swd
Volume: 10800 I. Gal. Detention: 1.8 min.

OLD PLANT

PRIMARY SEDIMENTATION:
Two, each 12' x 40' x 10' swd (avg)
Volume: 60,000 I. Gal. Detention: 1.9 hours
Overflow rate: 780 I. Gal/day/sq. ft.

AERATION TANKS:
Two, each 30' x 54' x 15' swd (avg)
Volume: 300,000 I. Gal. Detention: 9.7 hours
Fine bubble diffusion
Blowers: Two, size: each 784 cfm at 7.5 psi

SECONDARY SEDIMENTATION:
Two, 15' x 43' x 12' swd (avg)
Volume: 100,000 I. Gal. Detention: 3.2 hours
Overflow rate: 550 gal/day/sq. ft.

CHLORINE CONTACT CHAMBER:
Size: 18' x 12' x 11' swd
Volume: 13,000 I. Gal. Detention: 35 min.

SLUDGE HOLDING TANK:
Size : 11' x 25' x 12'6" swd
Volume: 22,000 I. Gal.

NEW PLANT

PRIMARY SEDIMENTATION:

Two, 16' x 65' x 11' swd (avg)
Volume: 142,000 I. Gal.
Detention: 2.3 hours
Overflow rate: 720 I. gal/ft^2/day

AERATION TANKS:
Two, each with two cells 30' square x 13' swd
Volume: 270,000 I. Gal.
Detention: 4.3 hours

SECONDARY SEDIMENTATION:
Two, each 16' x 78' x 12' swd
Volume: 187,000 I. Gal.
Detention: 3 hours
Overflow rate: 800 I. Gal/ft^2/day

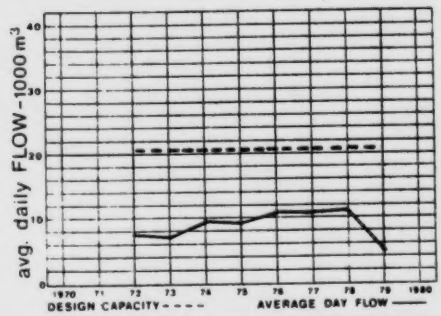
CHLORINE CONTACT CHAMBER:
Size: 28'6" x 24' x 10'3" swd
Volume: 41000 I. Gal.
Detention: 35 min.

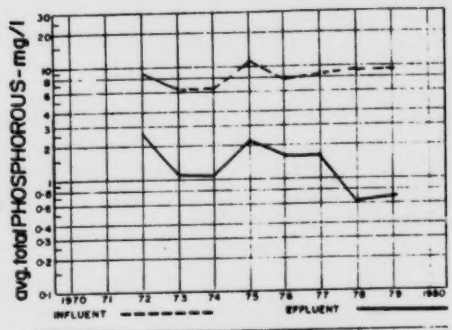
SLUDGE HANDLING (Common)

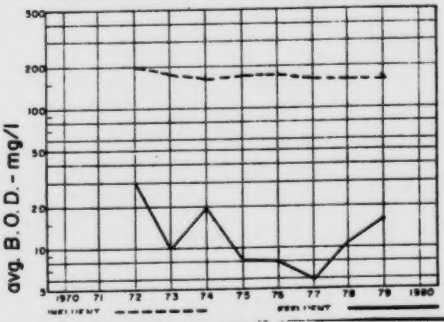
PRIMARY DIGESTER:
Size 45' dia. x 21'3" swd
Volume: 36,000 ft^3.

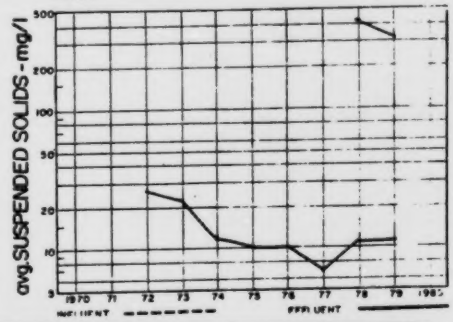
SECONDARY DIGESTER:
Size: 45' dia. x 25'
Volume: 39,000 ft^3

SLUDGE DRYING BEDS:
Six, each 20' x 75'
Area: 9000 ft^2









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110003970 INGERSOLL PLANT A 110000350 MUNICIPALITY : INGERSOLL (PLANT A)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY * DATA NOT AVAILABLE CURRENT POPULATION 8,253
POPULATION SERVED
PERCENT SERVED

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.600 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	40.523	1.307	2.073		188.0	16.0	89	9.7	349.0	13.0	97	21.7	17.0	8	95	994
FEB	37.318	1.333	3.100		148.0	9.0	98	5.2	274.0	8.0	97	9.9	9.4	4	95	299
MAR	6.196	.200	2.573		134.0	7.8	93	.7	334.0	7.0	97	2.0	7.8	.4	94	048
APR	63.180	2.104	3.273		180.0	8.0	96	10.6	182.0	4.0	97	9.3	6.3	.7	88	354
MAY	90.721	1.637	2.080		170.0	36.4	84	7.2	448.0	21.5	95	21.5	10.0	.7	93	472
JUN	43.333	1.445	1.696	3.180	108.0	3.8	96	4.5	218.0	4.0	98	9.1	7.6	.4	94	314
JUL	42.390	1.367	1.777	4.770	203.0	9.0	97	9.3	*	13.7			8.9	.1	98	373
AUG	42.825	1.381	1.683	4.930	280.0	12.2	95	11.4	*	8.4			7.3	1.0	85	299
SEP	41.769	1.393	1.682	3.340	280.0	5.9	97	11.4	*	2.0			9.9	.5	94	398
OCT	44.361	1.431	1.713	3.180	218.0	8.0	96	9.3	385.0	8.8	97	12.3	7.3	.7	89	298
NOV	45.174	1.506	2.400	3.260	178.0	13.4	92	7.3	194.0	4.4	97	8.5	8.8	*		
DEC	52.362	1.689	2.700	3.980	*	*			*	*			*	*		
TOTAL	510.172							82.3				94.6				3.457
AVERAGE		1.399			189.8	10.1	94		306.1	8.3	97		9.0	.5	93	
MAXIMUM			3.273	4.930												
NO. OF SAMPLES					17	18			14	18			18	14		

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110003969 INGERSOLL PLANT B 110000350 MUNICIPALITY INGERSOLL (PLANT B)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY * DATA NOT AVAILABLE CURRENT POPULATION 8,253
POPULATION SERVED
PERCENT SERVED

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.615 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	110.613	3.568	4.348	10.183	188.0	26.0	83	14.6	349.0	11.0	97	99.5	17.0	9	94	1 781
FEB	104.903	3.743	6.196	15.020	148.0	18.0	87	13.4	274.0	15.0	94	27.1	8.4	7	91	807
MAR	150.088	4.841	8.019	19.093	134.0	22.0	83	15.3	334.0	15.0	95	47.8	7.8	7	91	1 069
APR	184.188	6.140	9.828	23.930	180.0	12.8	92	30.7	152.0	4.0	97	27.2	9.4	2	97	1 883
MAY	99.614	3.213	4.805	15.010	170.0	22.8	86	14.6	448.0	14.5	96	42.9	10.0	5	94	940
JUN	92.120	3.071	3.932	12.470	108.0	8.9	91	9.1	218.0	11.3	94	19.7	7.6	4	94	687
JUL	89.236	2.791	3.423	18.200	238.0	10.0	95	19.3	390.0	10.9	95	30.4	8.7	4	95	707
AUG	91.578	2.954	3.837	16.550	280.0	9.4	96	24.7	*	8.5			7.3	9	86	584
SEP	84.321	2.810	3.350	10.700	288.0	6.6	97	23.4	318.0	1.1	99	26.5	10.0	1.2	87	738
OCT	88.215	2.846	3.854	13.490	218.0	8.8	96	18.6	385.0	5.5	98	24.6	7.2	2.2	69	478
NOV	99.134	3.304	4.930	14.780	178.0	8.4	95	16.5	194.0	4.3	97	18.8	8.8	3	96	829
DEC	110.310	3.558	6.430	17.600	178.0	61.0	65	13.0	178.0	78.0	56	11.0	8.8	*		
TOTAL	1300.090							213.5				324.9				10 236
AVERAGE		3.586			188.2	17.7	90		290.0	14.7	94		9.0	3.91		
MAXIMUM			9.828	23.930												
NO. OF SAMPLES																

DESIGN DATA - METRIC

ST. MARY'S

PROJECT Town of St. Mary's WPCP
PROJECT NO. 1-0030-66
DESIGN FLOW 3.64 $10^3 m^3/d$
BOD 195 mg/l
SS 200 mg/l

RAW SEWAGE PUMPING
3 FLYGT Model CP-3200 submersible pumps each rated 63.1 l/s @ 12.2m TDH

COMMINUTOR
Type - ECODYNE Mod 25R

SCREENING
Bar Screen

DETRITOR
Type - DORR-OLIVER Type WA. Cap. 17.27 $10^3 m^3/d$

PRIMARY CLARIFIERS
2, each 9.1m x 3.5m swd,
Volume (total) 475.24 m^3, Detention: 3.1 hr.
Overflow rate 27.38 $m^3/m^2.d$
Raw Sludge Pumps: Type - CARTER

AERATION TANKS
2, each 1.0m x 4.4m swd,
Volume (total) 866.56 m^3
Aerators: Type AMES-CROSTA Detention: 5.7 hr.
Return Sludge Pumps: 2 SMART-TURNER Model 3 WPCS

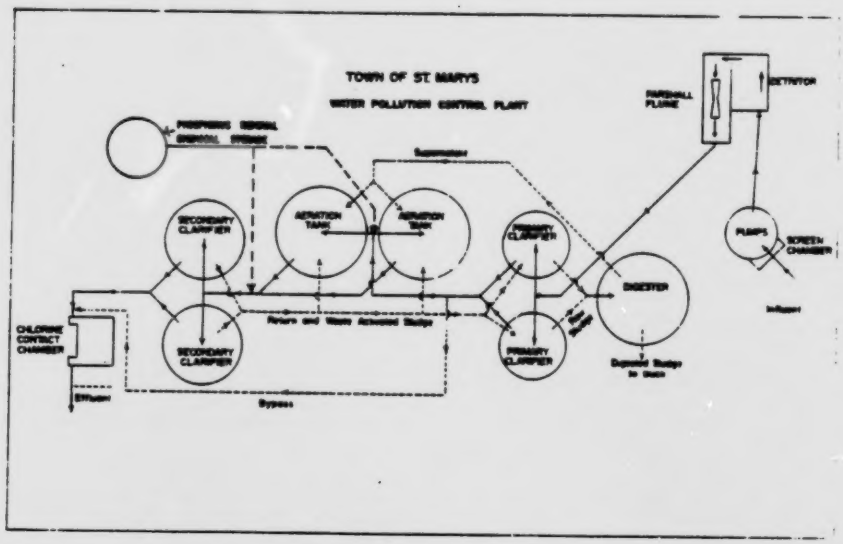
SECONDARY CLARIFIERS
2, each 10.7m x 3.05m swd
Volume (total) 549.83 m^3 Detention: 3.5 hr.
Overflow Rate: 20.29 m^3/m^2 d

CHLORINE CONTACT CHAMBER 4-pass
2 passes 1.34m x 4.08m x 2.9m swd
1 pass 1.48m x 4.08m x 2.9m swd
1 pass 2.04m x 4.08m x 2.9m swd
Volume(total) 6.95 m^3. Detention: 29 min.

CHLORINATOR TYPE
Wallace and Tiernan

PRIMARY DIGESTER
One, 12.2m x i.d_3 x 6.1m swd
Volume: 754.73 m^3

Outfall
Discharge to Thames River



DESIGN DATA - IMPERIAL

PROJECT	Town of St. Marys WPCP
PROJECT NO.	1-0030-66
DESIGN FLOW	0.800 MIGD
BOD -	195 mg/l
SS -	200 mg/l

RAW SEWAGE PUMPING

3 FLYGT Model CP03200 submersible pumps each rated 1000 USGPM @ 40' TDH

COMMINUTOR

Type - ECODYNE Mod 25R

SCREENING

Bar Screen

DETRITOR

Type - DORR-OLIVER Type WA.
Cap. 3.8 MGD

PRIMARY CLARIFIERS

2 each 30.0' i.d.x11.5'swd
Volume (total) 104540 I. gal.
Detention: 3.1 hr.
Overflow rate: 560 gpd per sq.ft.
Raw Sludge Pumps: Type - CARTER

AERATION TANKS

2 each 36.0' i.d.x15.0'swd
Volume (total) 190,620 I.gal.
Detention: 5 7 hr.
Aerators: Type AMES-CROSTA
Return Sludge Pumps:
2 SMART-TURNER Model 3 WPCS

SECONDARY CLARIFIERS

2 each 35.0'i.d.x10.0' swd
Volume (total) 120,947 I.G.
Detention: 3.5 hr.
Overflow Rate: 415 gpd per sq.ft.

CHLORINE CONTACT CHAMBER 4-pass

2 passes4.4' wx13.0'lx9.5'swd
1 pass 4.8'wx13.0'lx9.5'swd
1 pass 6.7'wx13.0'lx9.5'swd
Volume (total) 1528 I.G.
Detention: 29 min.

CHLORINATOR TYPE

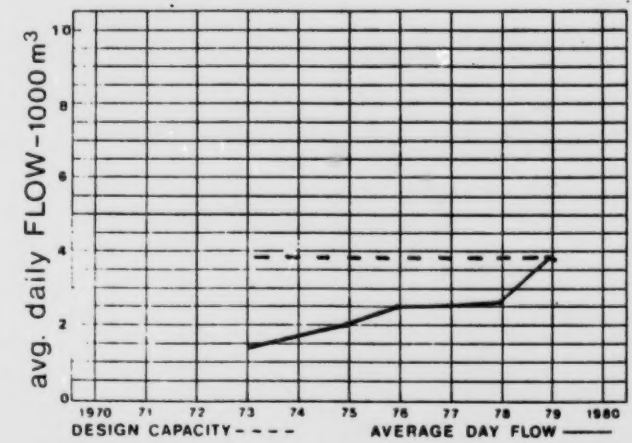
Wallace and Tiernan

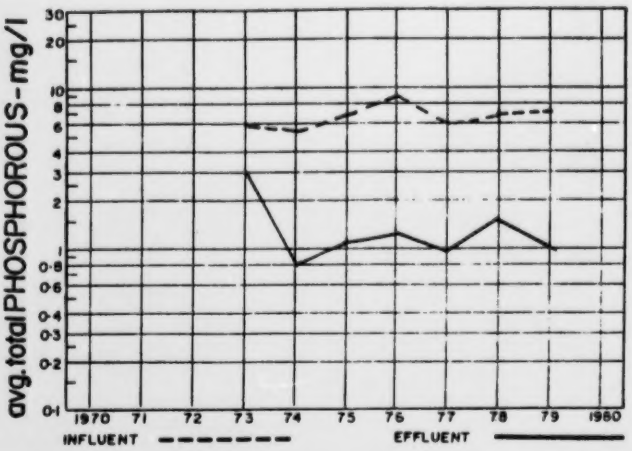
PRIMARY DIGESTER

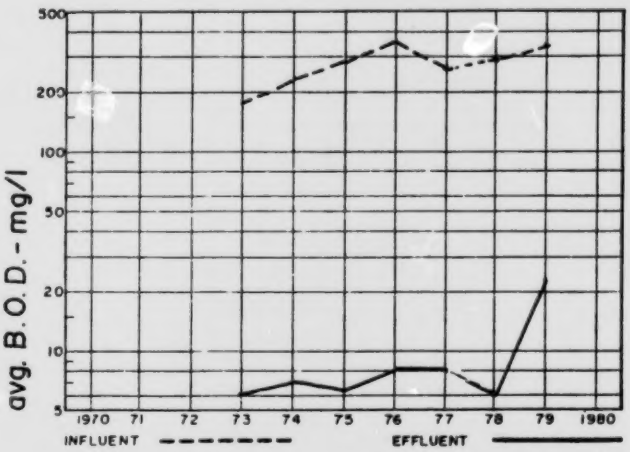
1 - 40.0' i.d.x20.0'swd
Volume: 26650 cu.ft.

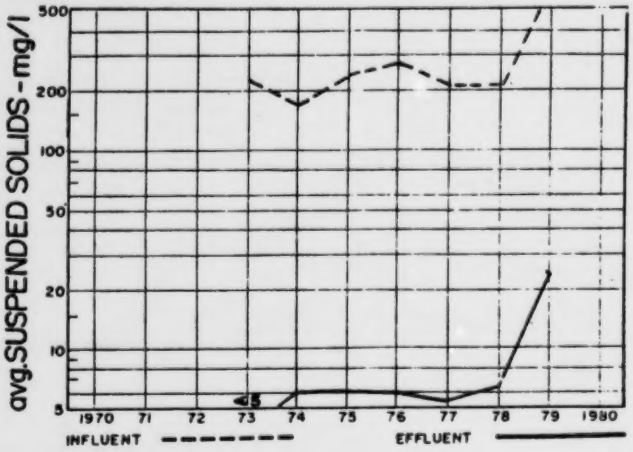
OUTFALL

Discharge to Thames River









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001275 ST MARY'S WPCP

MUNICIPALITY : ST MARY'S
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 4,709
POPULATION SERVED : 4,733
PERCENT SERVED : 100.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.636 1000 M3 DESIGN BODS : 195.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	77.023	2.485	3.782	9.092	242.0	8.8	96	17.9	179.0	8.5	95	13.1	7.4	1.8	78	.447
FEB	71.554	2.556	3.855	9.092	255.0	17.2	93	17.0	202.0	18.2	90	13.1	7.4	1.2	83	.444
MAR	136.016	4.388	7.401	9.092	90.0	6.2	93	11.3	117.0	1.3	98	15.7	4.7	.9	80	.517
APR	139.460	4.640	8.620	9.000	140.0	3.4	97	19.0	86.5	7.0	91	11.0	3.7	.5	84	438
MAY	104.300	3.400	4.500	9.000	196.0	6.0	96	19.8	100.0	6.2	93	9.7	6.1	.5	90	.579
JUN	82.490	2.740	3.340	9.000	252.5	3.8	98	20.5	159.5	10.0	93	12.3	6.1	2.0	67	.342
JUL	77.100	2.400	3.200	9.000	325.0	9.6	97	24.3	277.0	8.2	97	20.7	7.9	.4	94	.573
AUG	69.000	2.200	3.500	9.000	710.0	20.6	97	47.5	3347.0	90.0	98	227.4	8.4	1.0	88	.511
SEP	69.100	2.200	2.800	9.000	445.0	24.1	94	29.0	240.0	41.7	82	13.7	10.0	.7	93	.643
OCT	76.400	2.400	2.900	9.000	613.0	75.0	87	41.1	3333.0	125.0	96	245.0	7.9	2.3	70	.428
NOV	94.500	3.100	5.000	9.000	460.0	44.3	90	39.2	365.0	21.0	94	32.5	8.8	1.1	87	728
DEC	102.000	3.300	5.700	9.000	374.0	24.6	93	35.6	156.0	8.0	94	15.0	6.6	.6	89	.605
TOTAL	1098.943							322.7				629.8				6.255
AVERAGE		2.984			341.8	20.3	94		713.5	25.4	96		7.0	1.0	84	
MAXIMUM			8.620	9.092												
NO. OF SAMPLES					42	42			43	47			43	43		

DESIGN DATA - METRIC

TILLSONBURG

Project: Town of Tillsonburg WPCP
Project No.: 1-0137-67
Design Flow: 8.183 $10^3 m^3/d$
BOD: Raw Sewage - 235 mg/l
Removal 95%

SS: Raw Sewage - 250 mg/l
Removal 95%

PRIMARY TREATMENT

AIR DEGRITTER:
Size, 4.0m x 4.6m x 3.05m swd
Volume: 55.279m^3 Detention: 9.7 min.

PRIMARY SEDIMENTATION
Two, Size 15.2m x 3.05m x 2.4m swd
One, Size 15.2m x 6.1m x 2.8m swd
Volume: (total) 463.69m^3
Detention: 1.3 hours
Overflow Rate: 44.0 $m^3/m^2 \cdot d$

SECONDARY TREATMENT

AERATION TANKS:
Type: Diffused Air
Size: Four, size 15.2m x 9.1m x 4.0m swd
Volume (total): 2213.8m^3
Detention: (total) 6.5 hours

SECONDARY SEDIMENTATION:
Size: Two, size 15.2m x 3.8m x 3.7m swd
One, size 19.8m x 6.1m x 3.81m swd
Volume (total): 809.19m^3
Detention (total) 2.4 hr.
Overflow Rate: 30.13 $m^3/m^2 \cdot d$

CHLORINATION
Chlorinator: Type: W & T A 731
Size: 181.4 kg/d

CHLORINE CONTACT CHAMBER:
Size: 6.4m x 6.1m x 2.8m
Volume: 1091.1 m^3

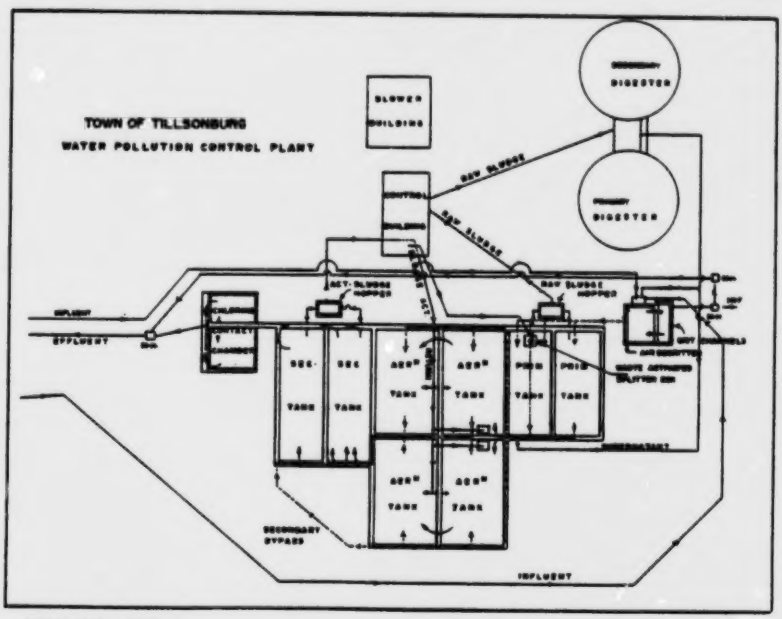
OUTFALL - to creek

SLUDGE HANDLING:
Digestion System: Two-Stage
Primary Digester: 13.7m x 6.1m
Volume: 1019.5 m^3
Secondary Digester: 13.7m x 6.1m
Volume: 1019.5m^3

PUMPING STATION:
John Pound Street Pumping Station

Capacity: 12.274 $10^3 m^3$/ d plus 50% standby

Screening and Comminution.



DESIGN DATA - IMPERIAL

Project: Town of Tillsonburg WPCP
Project No.: 1-0137-67
Design Flow: 1.8 MGD
BOD: Raw Sewage - 235 mg/l
Removal 95%
SS: Raw Sewage - 250 mg/l
Removal 95%

PRIMARY TREATMENT

AIR DEGRITTER:
Size, 13' x 15' x 10' swd
Volume: 12,100 I. Gal. Detention: 9.7 min.

PRIMARY SEDIMENTATION:
Two, Size 50.3' x 10' x 8' swd
One, Size 50' x 20' x 8.25' swd
Volume: (total) 102,000 I. Gal.
Detention: 1.3 hours
Overflow Rate: 900 gal/ft^2/day

SECONDARY TREATMENT

AERATION TANKS:
Type: Diffused Air
Size: Four, size 50' x 30' x 13' swd
Volume (total): 487,000 I. Gal.
Detention: (total) 6.5 hours

SECONDARY SEDIMENTATION:
Size: Two, size 50.3' x 10' x 12.25' swd
One, size 65' x 20' x 12.5' swd
Volume (total): 178,000 I. Gal.
Detention (total) 2.4 hr.
Overflow Rate: 780 gal/ft^2/day

CHLORINATION:
Chlorinator: Type: W & T A731
Size: 400 lb/day

CHLORINE CONTACT CHAMBER:
Size: 21' x 20' x 8.5' swd
Volume: 24,000 I. Gal. Detention: 19 min.

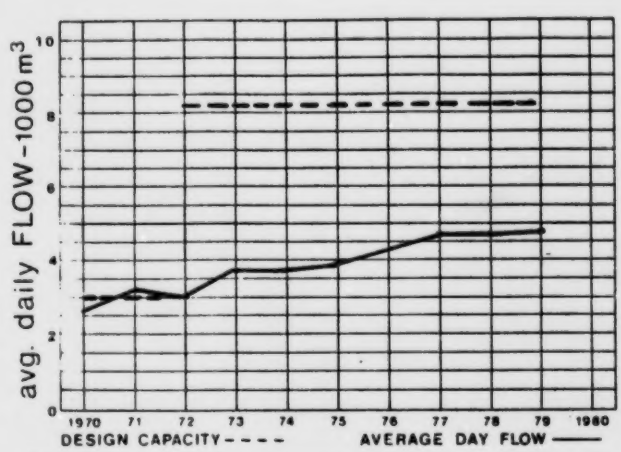
OUTFALL - to creek

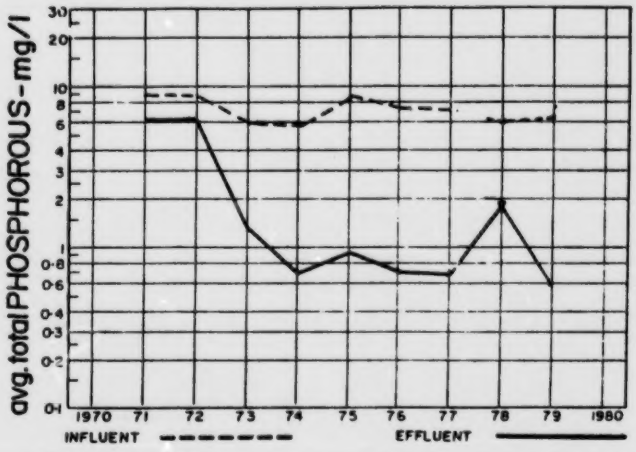
SLUDGE HANDLING:
Digestion System : Two-Stage
Primary Digester: 45' dia. x 20' swd
Volume: 36,000 ft^3
Secondary Digester: 45' dia. x 20' swd
Volume: 36,000 ft^3

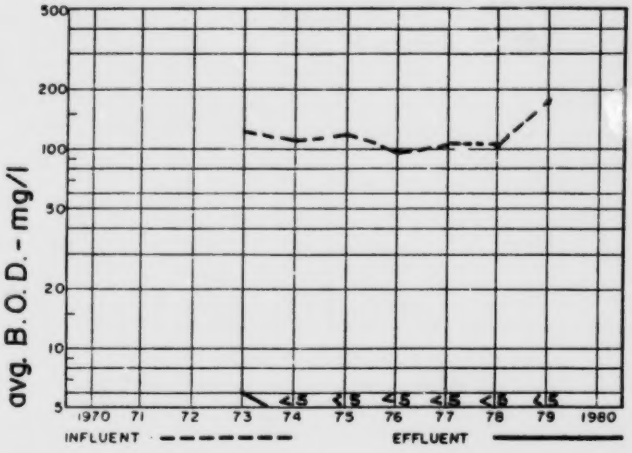
PUMPING STATION:
John Pound Street Pumping Station

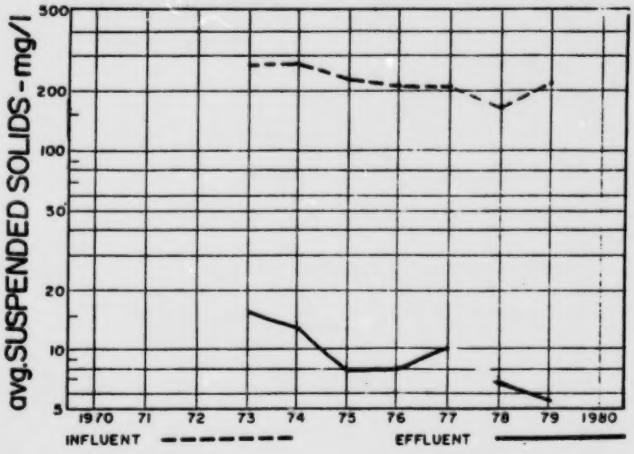
Capacity: 2.7 MGD plus 50% standby

Screening and Comminution.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000757 TILLSONBURG WPCP

MUNICIPALITY : TILLSONBURG
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 9,774
POPULATION SERVED : 10,350
PERCENT SERVED : 105.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 8.182 1000 M3 DESIGN BOD5 : 235.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	141.585	4.567	5.284	7.274	195.0	3.0	98	27.1	238.0	5.5	97	32.6	7.2	.4	94	.983
FEB	128.479	4.589	6.642	13.020	108.0	4.0	96	13.1	218.0	5.1	97	27.0	6.4	.5	92	.758
MAR	160.083	5.164	7.833	11.015	94.0	3.6	96	14.4	235.0	7.6	96	38.4	9.3	.5	94	1.409
APR	173.109	5.770	7.616	10.300	82.0	3.2	96	13.6	181.4	5.9	96	30.3	5.0	.6	88	.762
MAY	154.510	4.984	5.674	8.400	80.0	2.8	96	11.9	212.8	7.9	96	31.6	6.6	.6	89	.915
JUN	138.165	4.605	5.110	7.500	95.0	5.4	94	12.3	166.8	6.6	96	22.1	5.9	.5	90	.738
JUL	131.866	4.253	4.658	9.200	126.0	2.0	98	16.3	219.5	6.4	97	28.0	8.2	.6	92	1.000
AUG	133.276	4.299	5.126	13.000	104.0	.8	99	13.7	231.4	3.3	98	30.3	8.1	.6	91	.992
SEP	125.417	4.180	4.691	7.400	104.0	1.6	98	12.8	206.4	5.4	97	25.1	7.2	1.0	86	.778
OCT	135.474	4.370	4.853	9.400	78.0	1.0	98	10.4	202.0	4.6	97	25.7	5.8	1.1	80	.633
NOV	139.717	4.657	5.729	7.800	106.0	2.0	98	14.5	182.2	4.4	97	24.8	6.1	.4	93	.796
DEC	154.181	4.973	6.652	9.400	60.0	3.2	94	8.7	207.3	3.7	98	31.3	4.6	.4	89	.634
TOTAL	1715.862							169.3				346.9				10.378
AVERAGE		4.701			102.5	2.7	97		208.0	5.5	97		6.7	.6	90	
MAXIMUM			7.833	13.020												
NO. OF SAMPLES					12	12			61	61			12	12		

DESIGN DATA - METRIC

TUCKERSMITH (VAN ASTRA)

PROJECT: Van Astra WPCP

PROJECT NO: 2-1003-73

DESIGN FLOW: 1.4 m^3/d

COMMINUTOR
One

GRIT REMOVAL
none

PRIMARY SEDIMENTATION
Type: One, circular
Size: 9.1m i.d x 2.4m swd
Volume: 160.3 m^3
Retention: 1.9 hr.
Loading:
- Surface 37.1$m^3/m^2 \cdot d$
- Weir 78.0$m^3/m \cdot d$

AERATION TANKS
Type: Two, rectangular
Size: each 18.3m x 3.0m x 3.0m swd
Volume (total): 336.6m^3
Retention: 4.0 hr

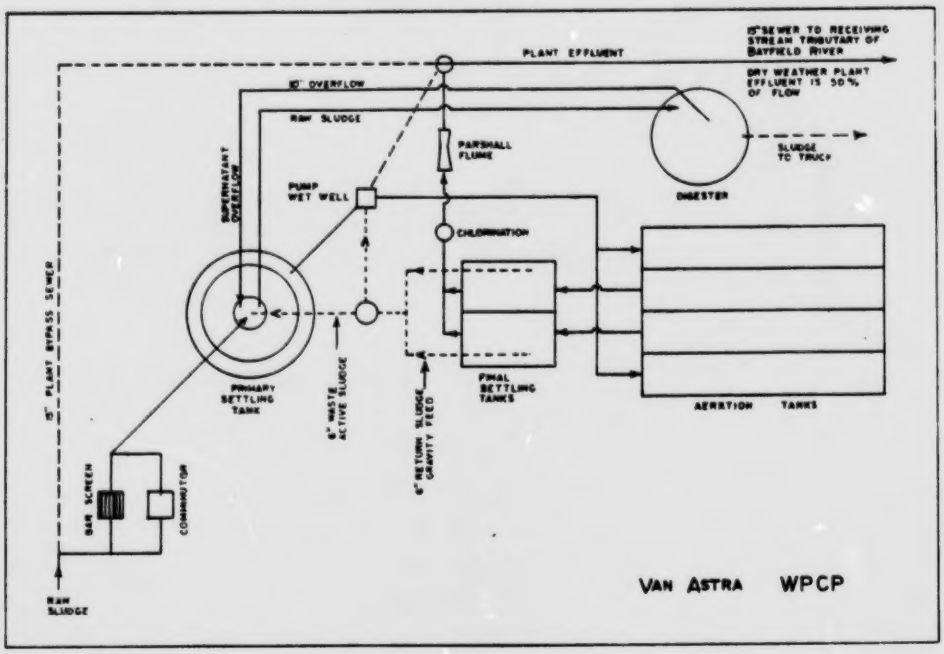
BLOWERS

Type: Two, positive displacement
Size: One, 188.1 l/s
One, 167.2 l/s

SECONDARY SEDIMENTATION
Type: Two, square
Size: 6.4m x 6.4m x 3.0m swd
Volume: (total) 244.3m^3
Retention: 2.9 hr

SLUDGE DIGESTION
Type: single-stage anaerobic
Size: 10.4m i.d. x 6.4m swd
Volume: 540.9m^3

CHLORINATION
Type: gas



DESIGN DATA - IMPERIAL

PROJECT: Vanastra WPCP

PROJECT NO: 2-1003-73

DESIGN FLOW: 0.31 MGD

COMMINUTOR
One

GRIT REMOVAL
none

PRIMARY SEDIMENTATION
Type: One, circular
Size: 30' i.d x 8' swd
Volume: 35,300 I.G.
Retention: 1.9 hr
Loading:
- Surface 758 I.G./ft^2/day
- Weir 5233 I.G./ft/day

AERATION TANKS
Type: Two, rectangular
Size: each 60' x 10' x 10' swd
Volume (total): 74,800 I.G.
Retention: 4.0 hr

BLOWERS

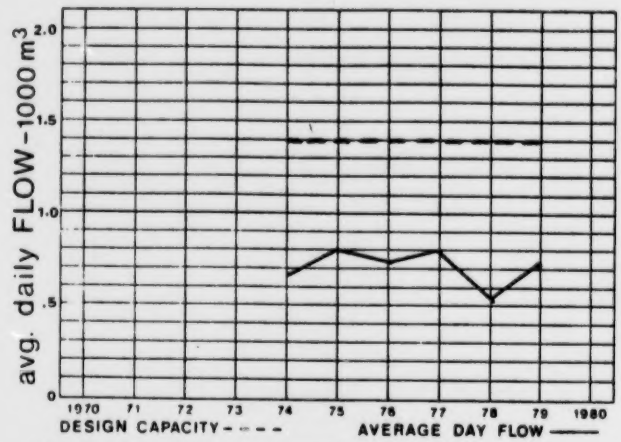
Type: Two, positive displacement
Size: One, 450 cfm

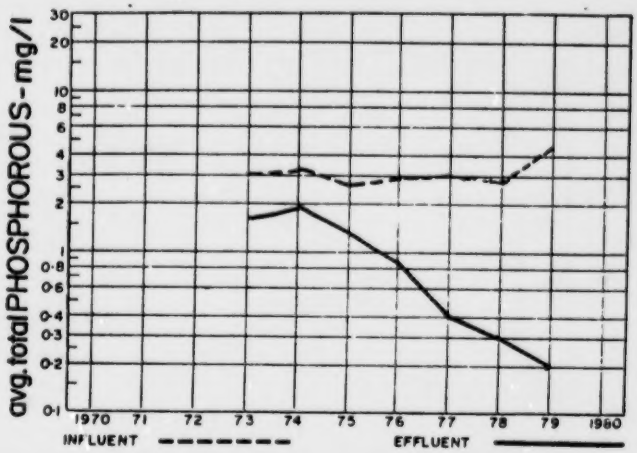
One, 400 cfm

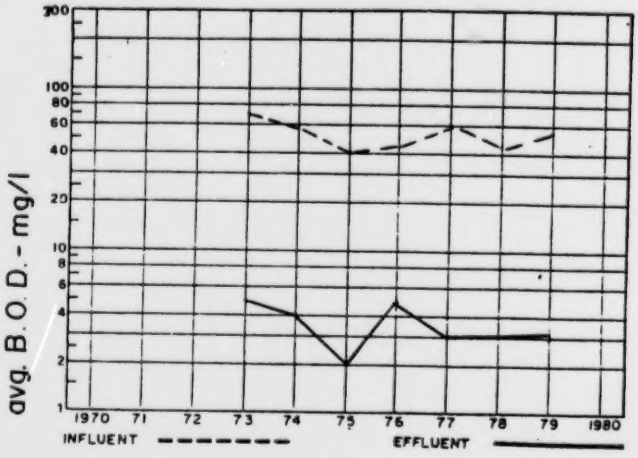
SECONDARY SEDIMENTATION
Type: Two, square
Size: 21' x 21' x 9.75' swd
Volume: (total) 53,800 I.G.
Retention: 2.9 hr

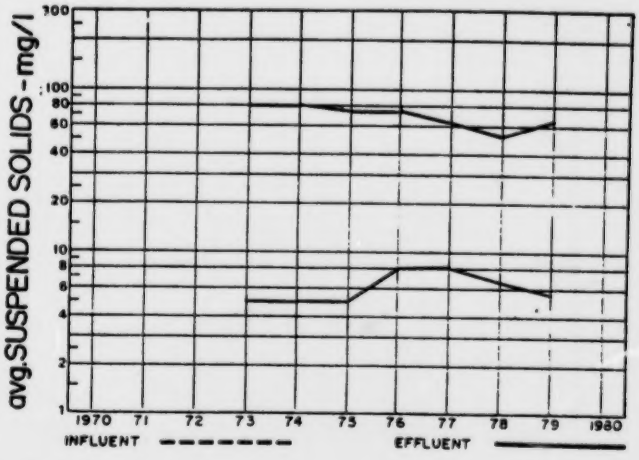
SLUDGE DIGESTION
Type: single-stage anaerobic
Size: 34' i.d. x 21' swd
Volume: 19100 ft^3

CHLORINATION
Type: gas









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110003013 VAN ASTRA W P C P

MUNICIPALITY : TUCKERSMITH (VAN ASTRA)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY

* DATA NOT AVAILABLE

CURRENT POPULATION : 3,189
POPULATION SERVED : 650
PERCENT SERVED : 20.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.404 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	BOD INFLUENT MG/L	BOD EFFLUENT MG/L	BOD REDUCTION %	BOD REDUCTION 1000 KG	SUSP. SOLIDS INFLUENT MG/L	SUSP. SOLIDS EFFLUENT MG/L	SUSP. SOLIDS REDUCTION %	SUSP. SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS REDUCTION %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	16.288	.525	2.682	3.182	38.0	4.0	89	.5	36.0	12.5	65	.3	2.4	.3	87	.034
FEB	9.869	.352	1.446	1.818	78.0	6.1	92	.7	88.0	6.0	93	.8	4.2	.4	90	.038
MAR	51.270	1.654	5.001	.759	14.0	6.2	55	.4	13.0	4.0	69	.4	.9	.3	66	.031
APR	34.008	1.134	2.505	2.700	27.0	4.1	84	.7	34.5	9.0	73	.8	2.1	.3	85	.061
MAY	13.300	.429	.713	.900	32.0	2.0	93	.3	38.0	5.5	85	.4	3.9	.2	93	.049
JUN	6.393	.213	.400		72.0	.4	99	.4	68.0	.5	99	.4	7.2	.3	95	.044
JUL	6.821	.220	.711		65.0	2.1	96	.4	91.0	4.0	95	.5	5.8	.2	95	.038
AUG	6.304	.203	.270		89.0	1.7	98	.5	119.5	2.0	98	.7	6.3	.2	95	.038
SEP	6.982	.233	.420		*	*			*	*			*	*		
OCT	26.460	.853	1.760		57.0	1.9	96	1.4	85.5	3.2	95	1.6	5.0	.2	94	.126
NOV	39.544	1.318	3.490		64.0	4.0	93	2.3	80.0	12.5	79	1.8	8.6	.3	96	.327
DEC	45.888	1.480	2.316		*	*			*	*			*	*		
TOTAL	263.127							8.1				8.2				.788
AVERAGE		.718			53.6	3.2	93		61.3	5.9	90		4.6	.2	93	
MAXIMUM			5.001	3.182												
NO. OF SAMPLES					18	18			18	18			18	18		

110

DESIGN DATA - METRIC

WALLACEBURG

PROJECT: Town of Wallaceburg WPCP

PROJECT NO.: 1-0087-67

DESIGN POPULATION: 13,500

DESIGN LOADING: 6.819 $10^3 m^3/d$

DESIGN BOD LOADING: 200 mg/l

DESIGN SS LOADING: 250 mg/l

COMMINUTION

No. of units - 1
Type: Barminutor

GRIT REMOVAL

No. of tanks - 1
Type: Aerated by diffusers

PRIMARY SEDIMENTATION

No. of tanks - 2
Tank dimensions: 4.9m x 14.6m x 4.4m each
Detention: 2.22 hours

AERATION

No. of tanks - 2
Type: aerated by diffusers
Tank dimensions: 4.9m x 32.3m x 4.0m each
Detention: 4.49 hours

SECONDARY SEDIMENTATION

No. of tanks - 2
Tank dimensions: 21.9m x 4.9m x 3.8m each
Detention: 2.68 hours

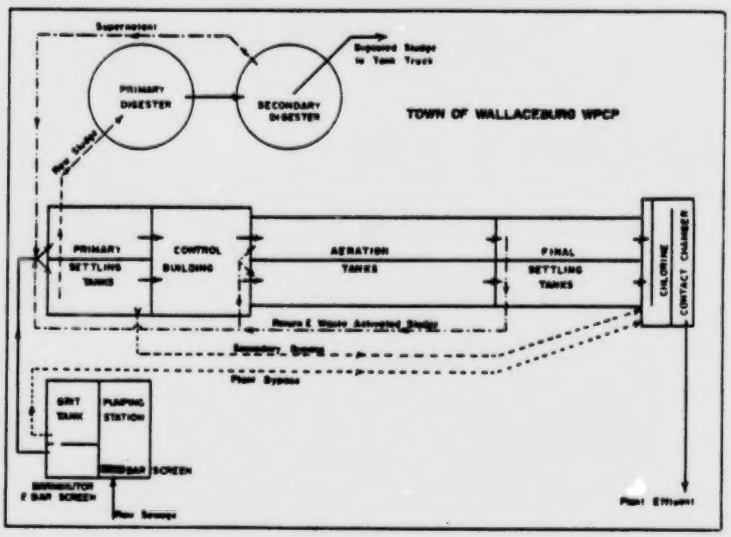
CHLORINATION

No. of tanks - 1
Detention: 21.8 min.

SLUDGE DIGESTION

No. of tanks - 2
Tank dimensions: one @ 10.7m dia. x 5.8m
one @ 10.7m x 5.8m
Total Detention: 21.1 days

Note: Also 10 Remote Sewage Pumping Stations.



DESIGN DATA - IMPERIAL

PROJECT	Town of Wallaceburg WPCP
PROJECT NO.	1-0087-67
DESIGN POPULATION	13,500
DESIGN LOADING	1.5 IMGD
DESIGN BOD	200.0 mg/l
DESIGN SS	250.0 mg/l

COMMINUTION

No. of units - 1
Type: Barminutor

GRIT REMOVAL

No. of tanks - 1
Type: Aerated by diffusers

PRIMARY SEDIMENTATION

No. of tanks - 2
Tank dimensions: 16'x48'x14.5' each
Detention: 2.22 hours

AERATION

No. of tanks - 2
Type: aerated by diffusers
Tank dimensions: 16'x106'x13.25' each
Detention: 4.49 hours

SECONDARY SEDIMENTATION

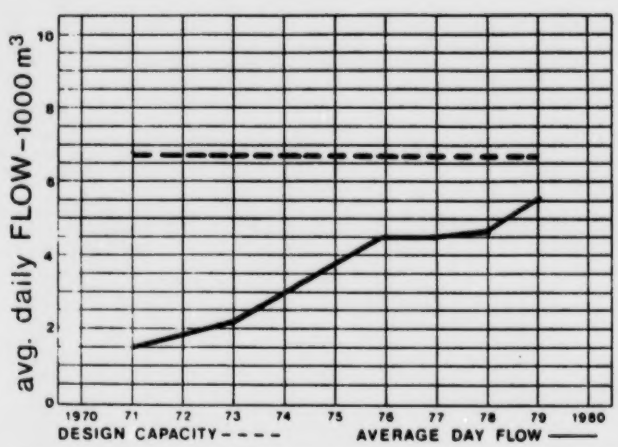
No. of tanks - 2
Tank dimensions: 72'x16'x12.5' each
Detention: 2.68 hours

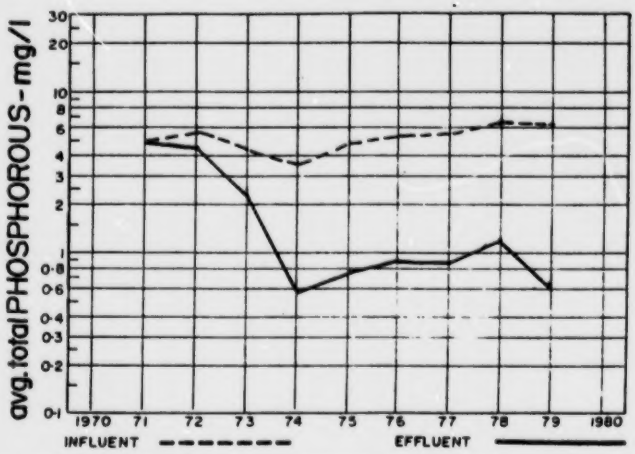
CHLORINATION

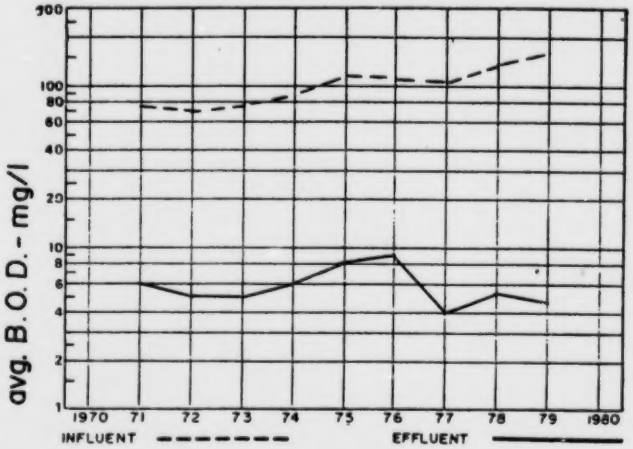
No. of tanks - 1
Detention: 21.8 min.

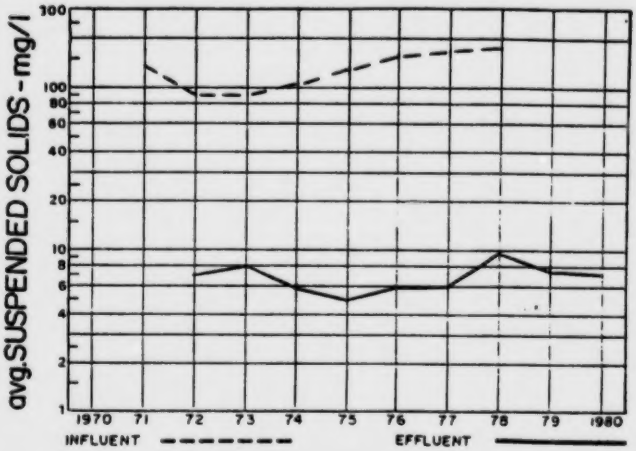
SLUDGE DIGESTION

No. of tanks - 2
Tank dimensions: one @ 35' dia x 19'
one @ 35' x 18.5'
Total Detention: 21.1 days









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000784 WALLACEBURG WPCP

MUNICIPALITY : WALLACEBURG
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 11,143
POPULATION SERVED : 11,000
PERCENT SERVED : 98.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 8.819 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	138.517	4.468	4.995	11.365	155.0	2.3	98	21.1	168.0	8.5	94	22.0	5.5	.6	89	.679
FEB	127.543	4.555	7.537	13.638	156.0	9.4	93	18.6	212.0	12.4	94	25.4	5.9	.5	91	.689
MAR	170.511	5.500	8.019	11.365	153.0	6.8	95	24.9	243.0	6.1	97	40.3	5.9	.6	89	.904
APR	290.698	9.690	28.878	31.820	133.0	2.0	98	38.0	535.6	10.0	98	152.7	*	.6		
MAY	192.150	6.198	7.719	10:000	92.5	5.0	94	16.8	172.7	7.5	95	31.7	3.9	.6	83	.628
JUN	157.690	5.256	5.891	13.650	188.0	6.6	96	25.4	217.4	6.9	96	33.1	6.4	.8	87	.891
JUL	163.751	5.282	6.996	31.822	177.5	5.0	97	28.2	325.2	4.8	98	52.4	12.4	.7	94	1.916
AUG	153.636	4.956	6.602	24.550	149.0	2.6	98	22.4	236.2	7.0	97	35.2	6.3	.7	88	.854
SEP	134.912	4.497	5.990	33.640	158.8	2.1	98	21.1	348.3	4.8	98	46.3	5.0	.7	86	.580
OCT	144.888	4.674	5.938	10.450	156.3	4.5	97	21.9	204.5	4.6	97	28.9	6.0	.7	88	.768
NOV	132.530	4.418	6.478	10.683	166.0	4.3	97	21.4	220.8	7.2	96	28.3	5.9	.7	88	.689
DEC	200.826	6.478	14.511	36.368	160.0	4.7	97	31.1	206.8	6.1	97	40.3	5.9	1.0	82	.976
TOTAL	2007.652							291.6				537.2				9.574
AVERAGE		5.498			152.0	4.6	96		257.5	7.1	97		6.2	.6	88	
MAXIMUM			28.878	36.368												
NO. OF SAMPLES					49	46			248	248			18	37		

Ministry of the Environment
Ontario

West Central Region

②

REGIONAL OFFICE

STONEY CREEK
140 Centennial Pkwy. N.
416-561-7410

DISTRICT OFFICES

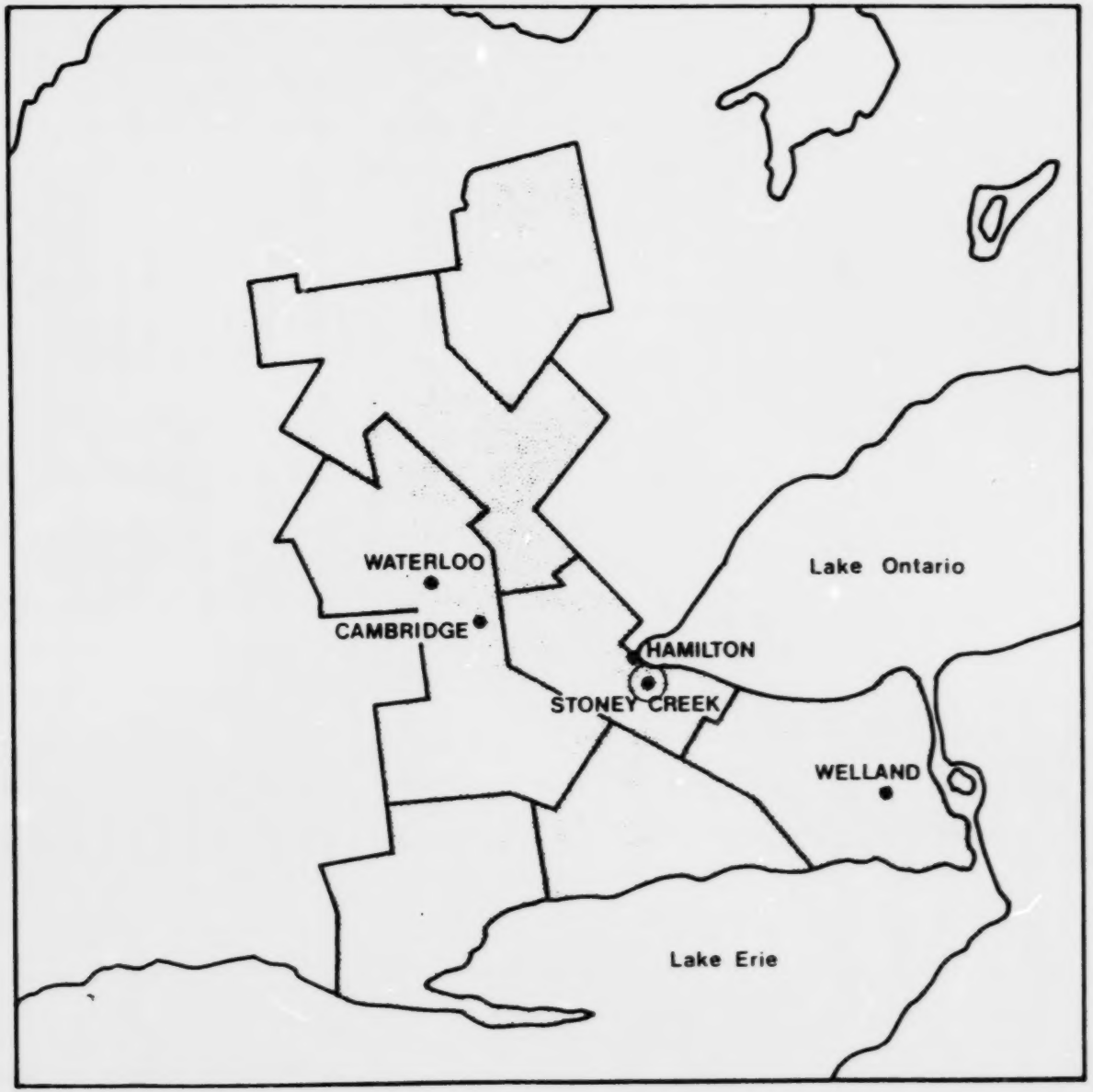
Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

West Central Region

Ministry of the Environment

Ontario



DESIGN DATA - METRIC

BRANTFORD

PROJECT City of Brantford WPCP

PROJECT NO 2- 1-58

TREATMENT Conventional Seconda

DESIGN FLOW 56.8 $10^3 m^3/d$

DESIGN POPULATION 65,000

BOD - Raw Sewage 170 mg/l
- Removal 90%

SS - Raw Sewage 175 mg/l
- Removal 90%

PRIMARY TREATMENT

Screening

Type: Coarse bar screens
Size: Two 127.0mm spaces

Comminution

Type: Infilco Rotogretor
Size: Two No. 43 (36.4 $10^3 m^3/d$)

Raw Sewage Pumps

Type: Fairbanks-Morse
Size: Four 290.7 l/s at 13.7m TDH

Grit Removal

Type: Dorr Detritor, Type WA
Size: Two 6.1m x 6.1m x 0.4m
Flow Velocity: 304.8mm/s
Retention: 0.725 min.

Primary Sedimentation

Type: Eimco, Type C
Size: Four 21.3m dia x 3.05m swd
Retention: 2 hours
Loading: Surface, 39.7 $m^3/m^2 \cdot d$
Weir, 211.6 $m^3/m \cdot d$

SECONDARY TREATMENT

Aeration Tanks

Type: Two triple-pass tanks
ACM mech aerators in
first pass: Diffused air
in 2nd and 3rd passes

Size of pass, 60.7m x 9 1m x 4.6m
Retention: 7.5 hr.

Air Supply

Type: Sutorbilt blowers
Size: Three 1797 l/s

Secondary Sedimentation

Type: Eimco, Type C
Size: Four 21.3m dia x 3.05m swd
Retention: 2 hr
Loading: Surface, 39.7 $m^3/m^2 \cdot d$
Weir, 211.6 $m^3/m \cdot d$

CHLORINATION

Chlorinator

Type: Fischer & Porter Manual
adjustment - liquid chlorine
evaporator

Chlorine Contact Chamber

Size: 15.5m x 5.5m x 2.1m
Retention: 5 min.

OUTFALL

Grand River

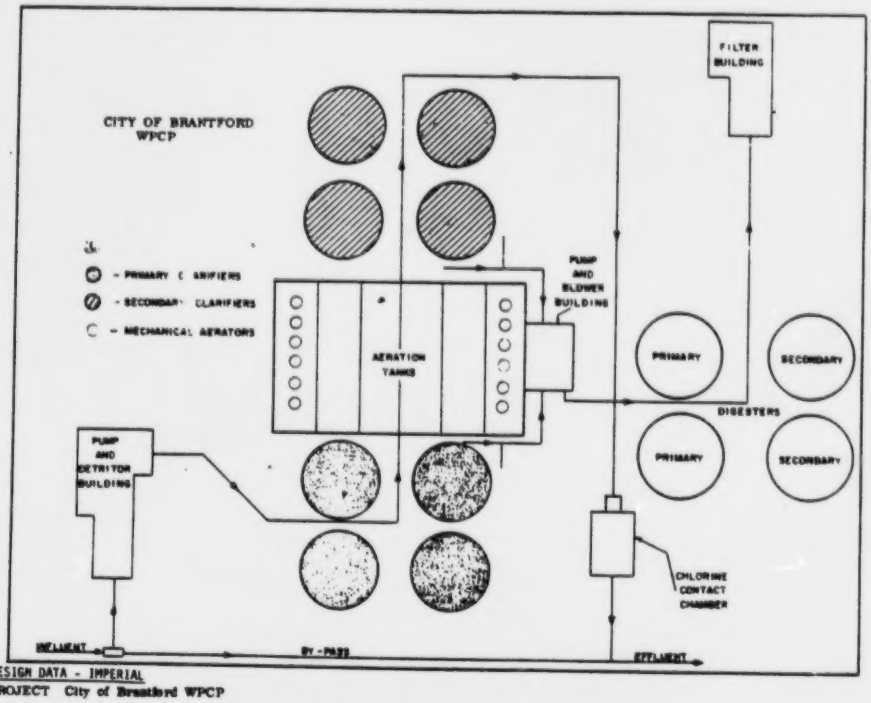
SLUDGE HANDLING

Digestion System

Type: Two-stage
Primary: Two 16.8m dia tanks with two
D-O-L mixers each
Volume: 1396.2 m^3
Loading: 62.2 kg/m^3
Secondary: Two 21.3m dia tanks with
Dorr floating covers
Volume: 2752.7 m^3
Total Loading: 20.4 kg/m^3

Vacuum Filter

Type: Komline-Sanderson coil filters
Size: Two 32.5m^2 filters



DESIGN DATA - IMPERIAL

PROJECT City of Brantford WPCP

PROJECT NO. 3-0011-58

TREATMENT Conventional Secondary

DESIGN FLOW 12.5 mgd

DESIGN POPULATION 65,000

BOD - Raw Sewage 170 mg/l
- Removal 90%

SS - Raw Sewage 175 mg/l
- Removal 90%

PRIMARY TREATMENT

Screening

Type: Coarse bar screens
Size: Two 5 in. spaces

Comminution

Type: Infilco Rotogretor
Size: Two No. 43 (8 mgd ea)

Raw Sewage Pumps

Type: Fairbanks-Morse
Size: Four 3840 gpm ea @ 45' tdh

Grit Removal

Type: Dorr Detritor, Type WA
Size: Two 20' x 20' x [illegible]
Flow Velocity: 1 fps
Retention: 0.725 min

Primary Sedimentation

Type: Eimco, Type C
Size: Four 70' dia x 10' swd
Retention: 2 hours
Loading: Surface, 812 gal/ft^2/day
Weir, 14,200 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Two triple-pass tanks
ACM mech aerators in
first pass: Diffused air
in 2nd and 3rd passes.

Size of pass, 200' x 30' x 15'
Retention: 7.5 hr

Air Supply

Type: Sutorbilt blowers
Size: Three 4300 cfm

Secondary Sedimentation

Type: Eimco, Type C
Size: Four 70' dia x 10' swd
Retention: 2 hr
Loading: Surface, 812 gal/ft^2/day
Weir, 14,200 gal/ft/day

CHLORINATION

Chlorinator

Type: Fischer & Porter Manual
adjustment - liquid chlorine
evaporator

Chlorine Contact Chamber

Size: 51' x 18' x 7'
Retention: 5 min

OUTFALL

Grand River

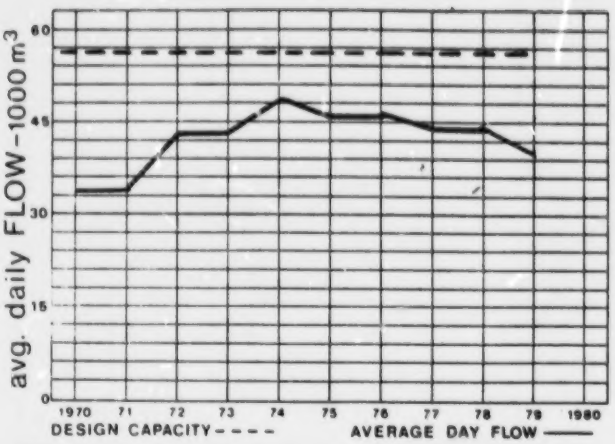
SLUDGE HANDLING

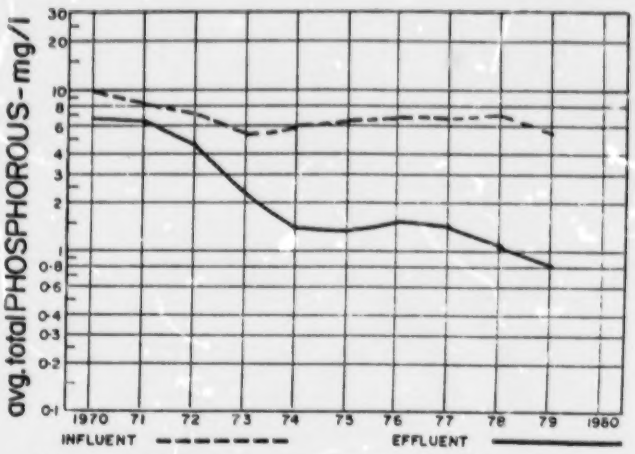
Digestion System

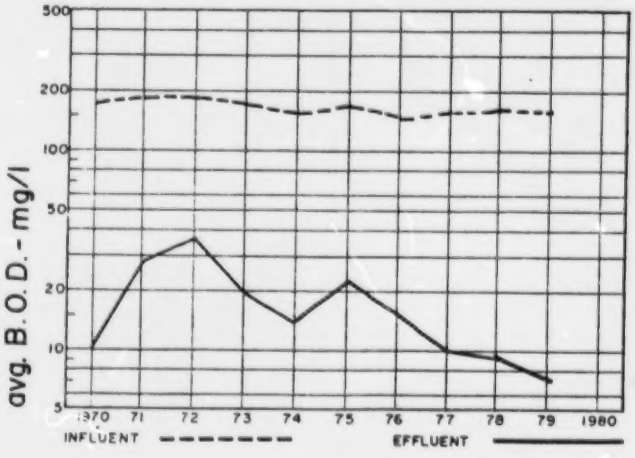
Type: Two-stage
Primary: Two 55' dia tanks with two
D-O-L mixers each
Volume 49,300 cu ft or
300,000 gal (each tank)
Loading 6.1 lb/ft^3/mo
Secondary: Two 70' dia tanks with
Dorr floating covers
Volume 97,200 cu ft or
600,000 gal (each tank)
Total Loading: 2.0 lb/ft^3/mo

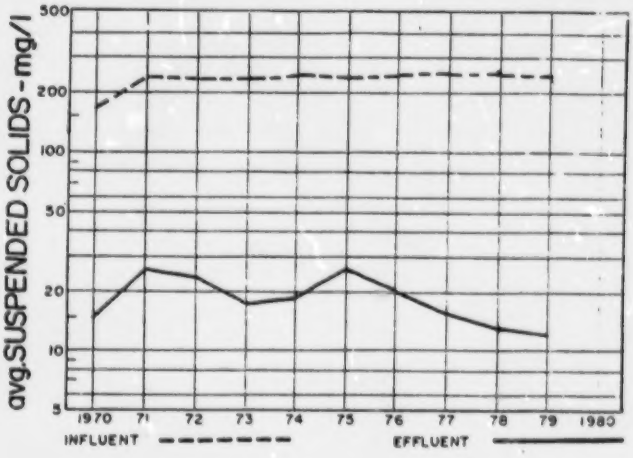
Vacuum Filter

Type: Komline-Sanderson coil filters
Size: Two 350 sq ft filters









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000043 BRANTFORD WPCP

MUNICIPALITY : BRANTFORD
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 89,091
POPULATION SERVED : 73,000
PERCENT SERVED : 109.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 98.825 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 175.0 MG/L

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	1214.850	39.189	43.564	70.460	172.0	11.8	93	194.6	198.0	15.9	91	221.2	5.4	.8	85	5.588
FEB	1006.575	35.949	40.431	75.100	162.0	7.4	95	155.6	273.0	17.1	93	257.5	5.1	.7	86	4.429
MAR	1202.371	38.786	43.640	75.100	168.0	6.1	96	192.2	247.0	12.4	94	282.0	5.2	.6	88	5.531
APR	1210.000	41.700	55.900	75.100	138.0	10.7	92	154.0	205.0	13.0	93	232.3	2.5	.3	84	2.614
MAY	1073.200	34.600	39.100	75.100	142.0	8.4	94	143.3	230.0	9.5	95	236.6	2.9	.7	76	2.415
JUN	1070.900	35.700	53.600	75.000	164.0	9.3	94	165.6	243.0	8.0	96	251.6	6.1	1.2	80	5.280
JUL	1329.700	42.900	49.300	75.000	153.0	5.1	96	196.6	220.0	5.7	97	284.9	6.9	1.1	83	7.699
AUG	1445.200	46.600	58.200	75.000	139.0	7.1	94	190.6	255.0	9.5	96	354.7	6.5	.7	88	8.339
SEP	1291.800	43.060	59.100		154.0	9.3	93	186.9	257.0	24.2	90	300.7	5.8	.8	85	6.511
OCT	1503.900	48.500	57.300		161.0	4.9	96	234.7	254.0	16.8	93	356.7	6.8	.9	85	8.843
NOV	1247.200	41.600	48.600	72.700	157.0	4.3	97	190.4	250.0	14.1	94	294.2	6.0	.7	87	6.598
DEC	1332.400	43.000	55.000	84.100	163.0	3.4	97	212.6	236.0	9.7	95	301.5	6.4	.7	88	7.681
TOTAL	14928.096							2217.6				3374.4				71.508
AVERAGE		40.965			155.9	7.3	95		239.0	12.9	94		5.5	.8	85	
MAXIMUM			59.100	84.100												
NO. OF SAMPLES					82	91			239	241			95	209		

DESIGN DATA - METRIC

CAMBRIDGE (GALT)

PROJECT: City of Cambridge (Galt) WPCP

PROJECT NO: 1-0099-67

TREATMENT: Conventional Secondary

DESIGN FLOW: 38.641 $10^3 m^3/d$

DESIGN POPULATION: 34,000

BOD: - Raw Sewage 250 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 90%

PRIMARY TREATMENT

Comminution

Type: C. P. Barminutor
Size: One Model C (0.914m)

Raw Sewage Pumps

Type: Babcock-Wilcox
Size: Three 26.50 l/s at 9.1 m

Grit Removal

Type: Eimco Detritor
Size: One 5.5m x 5.5m x 0.6m deep
Volume: 18.18m^3
Retention: 1.15 min

Primary Sedimentation

Type: (a) Dorr (old cl.)
(b) Eimco (new cl.)
Size: Two 18.3m dia x 2.7 m swd
Volume: (1433 m^3)
Retention: 1.5 hours
Loading: Surface, 43.22 $m^3/m^2 \cdot d$
Weir, 197.43 $m^3/m \cdot d$

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical aeration
Single pass (5-cell)
Size: Four 45.7m x 9.1m x 4.2m
(662.69 m^3)
Retention: 7.0 hours

Aerators

- Twenty Ames-Cresta

Secondary Sedimentation

Type: Eimco
Size: Two 22.9m dia x 3.05m swd
Volume: 2503.49 m^3
Retention: 2.64 hours
Loading: Surface, 27.67 $m^3/m^2 \cdot d$
Weir, 157.94 $m^3/m \cdot d$

CHLORINATION

- One F & P Automatic

Chlorine Contact Chamber

Size: One 15.0m x 6.6m x 2.2m
Volume: 209m^3
Retention: 13.25 min

OUTFALL

- to Grand River

SLUDGE HANDLING

Digestion System

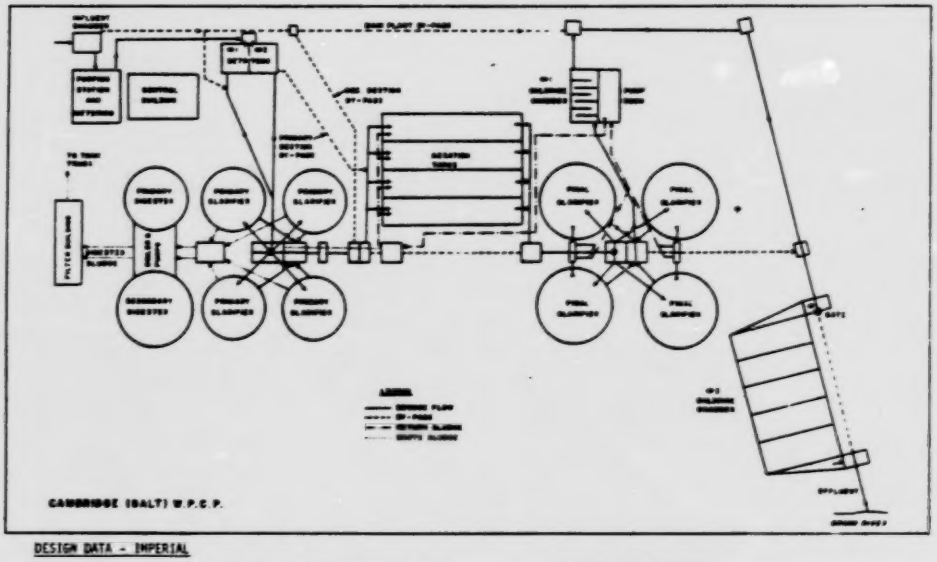
Type: Two-stage

Primary--
Type: Eimco draft tube mixers (2) on concrete roof
Size: One 15.2m dia. x 6.1 m swd
Volume: 8580.96m^3

Secondary--
Size: One 21.3m dia. x 6.1 m swd
Volume: 2180.64 m^3

Vacuum Filter

Type: Eimco (cloth)
Size: One 35.3 m^2



CAMBRIDGE (GALT) W.P.C.P.

DESIGN DATA - IMPERIAL

PROJECT NO. 1-0099-67

TREATMENT Conventional Secondary

DESIGN FLOW 8.5 mgd

DESIGN POPULATION 34,000

BOD - Raw Sewage 250 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 90%

PRIMARY TREATMENT

Comminution

Type: C.P. Barminutor
Size: One Model C (36")

Raw Sewage Pumps

Type: Babcock-Wilcox
Size: Three 3500 gpm @ 30' tdh

Grit Removal

Type: Eimco Detritor
Size: One 18' x 18' x 2' ddep
(4,000 gal)
Retention: 1.15 min

Primary Sedimentation

Type: (a) Dorr (old cl.)
(b) Eimco (new cl.)
Size: Two 60' dia x 9' swd
50,600 cu ft or 315,000 gal)
Retention: 1.5 hours
Loading: Surface, 884 gal/ft^2/day
Weir, 13,250 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical aeration
Single pass (5-cell)
Size: Four 150' x 30' x 13.7'
(234,000 cu ft or 1.46 mil gal)
Retention: 7.0 hours

Aerators

- Twenty Ames-Cresta

Secondary Sedimentation

Type: Eimco
Size: Two 75' dia x 10' swd
(88,400 cu ft or 550,000 gal)
Retention: 2.64 hours
Loading: Surface, 566 gal/ft^2/day
Weir, 10,600 gal/ft/day

CHLORINATION

- One F & P Automatic

Chlorine Contact Chamber

Size: One 49.25' x 21.5' x 7.25'
(46,000 gal)
Retention: 13.25 min

OUTFALL

- to Grand River

SLUDGE HANDLING

Digestion System

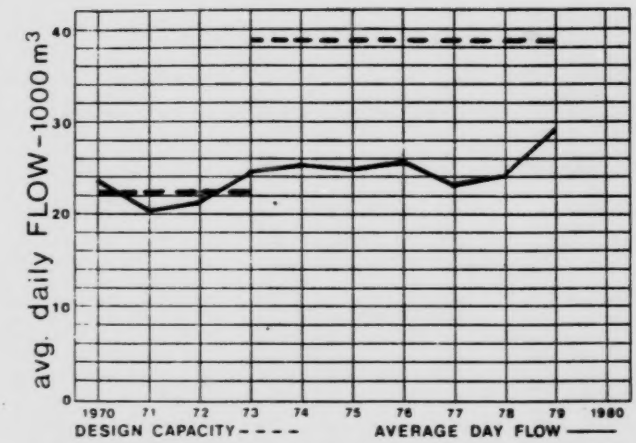
Type: Two-stage

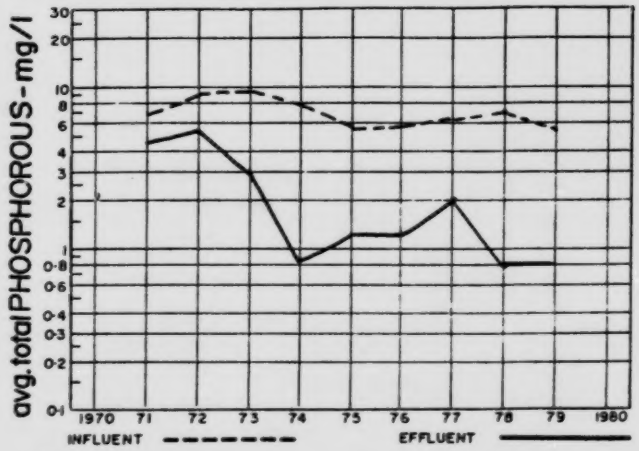
Primary --
Type: Eimco draft tube mixers (2) on concrete roof
Size: One 50' dia x 20' swd (30,300 cu ft or 189,000 gal)

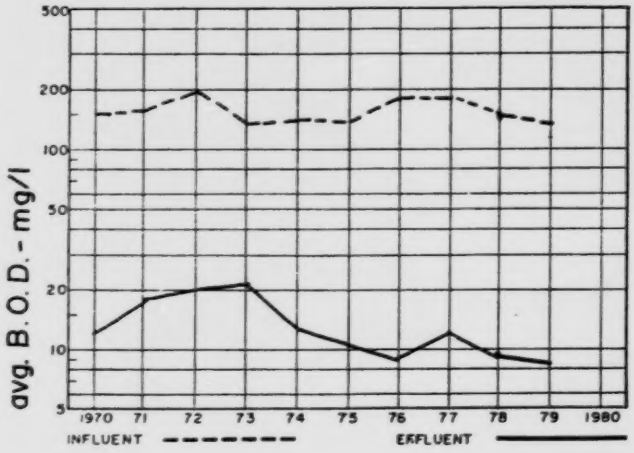
Secondary --
Size: One 70' dia x 20' swd (77,000 cu ft or 480,000 gal)

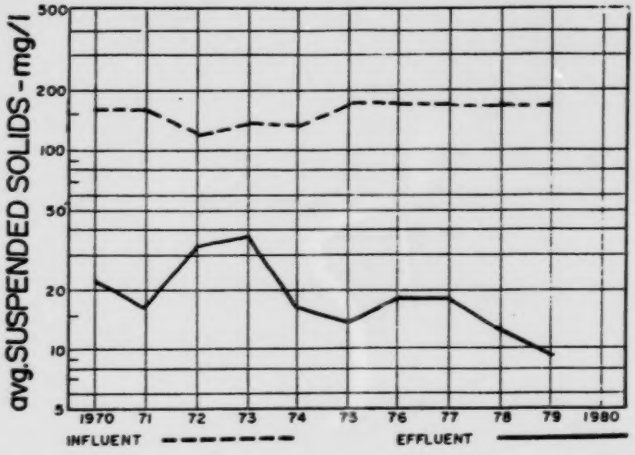
Vacuum Filter

Type: Eimco (cloth)
Size: One. 380 sq ft









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000276 GALT WPCP EXPAND IN 79

MUNICIPALITY : CAMBRIDGE (GALT)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 73,314
POPULATION SERVED : 48,000
PERCENT SERVED : 65.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 38.641 1000 M3 DESIGN BOD5 : 250.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	760.100	24.500	31.400	46.600	136.0	8.2	93	97.1	162.0	8.9	94	116.3	6.4	.8	87	4.257
FEB	786.640	28.090	31.400	41.000	144.0	9.9	93	105.4	166.0	10.8	93	122.0	6.1	.9	85	4.091
MAR	1023.532	33.017	40.000	63.100	134.0	12.1	90	124.7	136.0	12.0	91	126.9	5.7	.8	85	5.015
APR	993.255	33.110	38.600	74.000	113.0	11.8	89	100.4	128.6	10.5	91	117.3	5.6	1.0	82	4.589
MAY	937.160	30.230	33.180	63.000	126.0	7.2	94	111.3	135.6	6.6	95	120.8	5.3	.8	83	4.133
JUN	851.950	28.398	32.300	51.000	121.0	8.6	94	97.4	152.0	9.7	93	121.2	5.6	1.2	78	3.791
JUL	850.660	27.440	31.400	35.000	101.8	2.9	97	83.4	135.0	5.5	95	110.1	5.3	.7	85	3.913
AUG	864.740	27.900	52.300	75.000	114.4	4.1	96	95.3	134.0	7.8	94	109.0	4.8	.8	81	3.433
SEP	945.850	31.530	42.220	77.280	112.0	9.2	91	97.2	164.2	13.4	91	142.6	5.6	.9	82	4.379
OCT	892.512	28.790	32.870	61.370	120.0	9.1	92	98.9	149.0	12.2	91	122.0	5.3	.9	82	3.918
NOV	885.669	29.522	34.880	84.100	118.6	7.9	93	98.0	157.4	8.3	94	132.0	5.2	.8	84	3.879
DEC	906.091	29.229	37.000	84.100	127.0	8.8	93	107.1	144.0	6.6	95	124.4	6.2	.7	87	4.902
TOTAL	10698.159							1216.8				1485.3				50.280
AVERAGE		29.313			122.2	8.1	93		146.9	9.3	93		5.6	.8	84	
MAXIMUM			52.300	84.100												
NO. OF SAMPLES					114	106			253	298			110	238		

DESIGN DATA - METRIC

CAMBRIDGE (PRESTON)

PROJECT City of Cambridge (Preston) WPCP

PROJECT NO. 1-0134-67

TREATMENT Conventional Secondary

DESIGN FLOW 16.866 $10^3 m^3/d$

BOD - Raw Sewage 470 mg/l
- Removal

SS - Raw Sewage 470 mg/l
- Removal

PRIMARY TREATMENT

Grit Removal

Type: Dorr detritor
Size: One 6.1m x 6.1m x .45m
Volume: 17.0 m^3
Retention: 7 1 min

Comminution

Type: Barminutor
Size: Model C (914.4mm)

Primary Sedimentation

Type: Dorr
Size: Four 15.2m dia. x 3.05m swd
Volume: 2236.6m^3
Retention: 3.2 hr.
Loading: Surface, 22.49 $m^3/m^2.d$
Weir, 85.38 $m^3/m.d$

Sewage Lift Pumps

Type: Worthington
Size: Two 195.3 l/s
Size: One 136.2 l/s

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical: single-pass
Size: Two 45.7m x 9.1m x 4.0m
Volume: 3323m^3
Retention: 4.7 hr.

Aerators

- Ten Ames-Crosta x 18.6kW

Secondary Sedimentation

Type: Dorr
Size: Four 15.2 m dia x 3.05m swd
Volume: 2236.6 m^3
Retention: 3.2 hr.
Loading: Surface, 22.49 $m^3/m^2.d$
Weir, 85.38 $m^3/m.d$

CHLORINATION

Type: F & P
Size: One 181.44 kg/day

Chlorine Contact Chamber

Size: One 9.1m x 4.6m x 2.0m
Volume: 85.01m
Size: one 15.2m x 9.1m x 2.0m
Volume: 266.40m^3
Retention: (both) 30 min.

OUTFALL

- to Grand River

SLUDGE HANDLING

Holding Tank

Size: One 6.1m x 6.1m x 3.4m
Volume: 102.08 m^3

Digestion System

- Two-Stage

Primary Digester

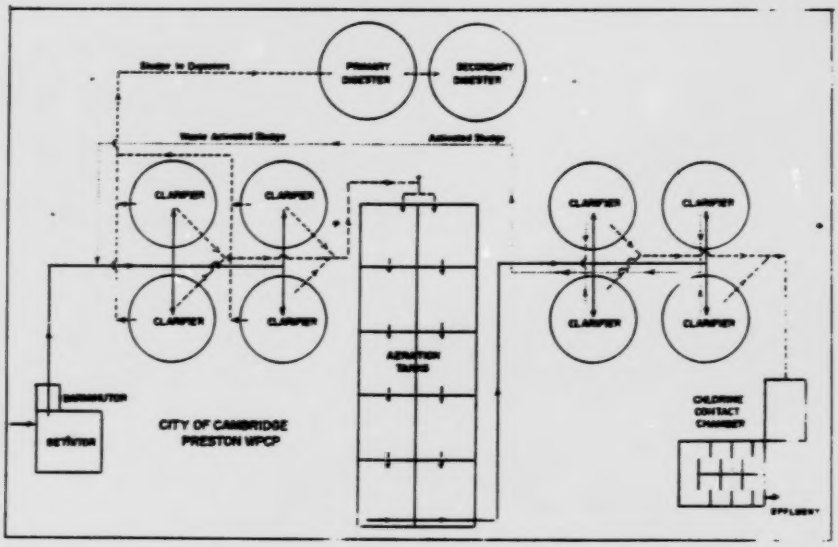
Size: One 15.2m dia. x 11.6m swd
Volume 2259.9m^3

Secondary Digester

Size: One 15.2m dia. x 11.6m swd
Volume 2259.9 m^3

Sludge Recirculating Pump

Type: Carter Duplex Mod 805
Size: 15.1 U/S @ 13.2m TDH



DESIGN DATA - IMPERIAL

PROJECT NO. 1-0134-67

TREATMENT Conventional Secondary

DESIGN FLOW 3.71 mgd

BOD - Raw Sewage 470 mg/l

SS - Raw Sewage 470 mg/l

PRIMARY TREATMENT

Grit Removal

Type: Dorr detritor
Size: One 20' x 20' x 1½' (3, 740 gal)
Retention: 2.1 min

Comminution

Type: Barminutor
Size: Model C (36")

Primary Sedimentation

Type: Dorr
Size: Four 50' dia x 10' swd
(492, 000 gal)
Retention: 2.2 hr
Loading: Surface, 480 gal/ft^2/day
Weir, 5730 gal/ft/day

Sewage Lift Pumps

Type: Worthington
Size: Two 3500 gpm
One 1800 gpm

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical; single-pass
Size: Two 150' x 30' x 13'
(731, 000 gal)
Retention: 4.7 hr

Aerators

- Ten Ames-Crosta x 25 HP

Secondary Sedimentation

Type: Dorr
Size: Four 50' dia x 10' swd
(492, 000 gal)
Retention: 2.2 hr
Loading: Surface, 480 gal/ft^2/day
Weir, 5730 gal/ft/day

CHLORINATION

Type: F & P
Size: One 400 lb/day

Chlorine Contact Chamber

Size: One 30' x 15' x 6' 6
(18, 700 gal)
Size: one 50' x 30' x 6'9"
(58, 800 gal)
Retention: (both) 30 min

OUTFALL

- to Grand River

SLUDGE HANDLING

Holding Tank

Size: One 20' x 20' x 11'
(4, 400 cu ft or 27, 400 gal)

Digestion System

- Two-Stage

Primary Digester

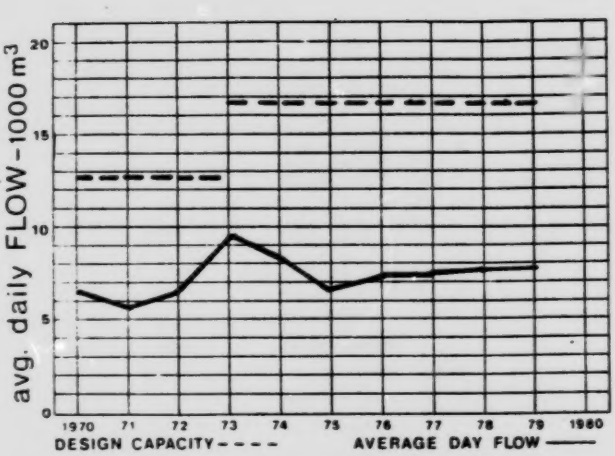
Size: One 50' dia x 38' swd
(79, 800 ft^3)

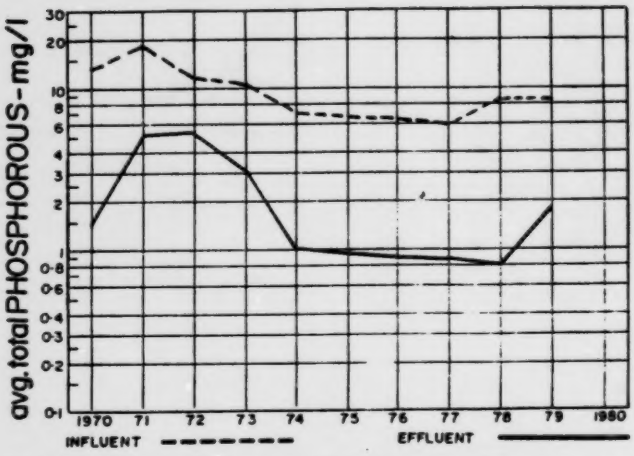
Secondary Digester

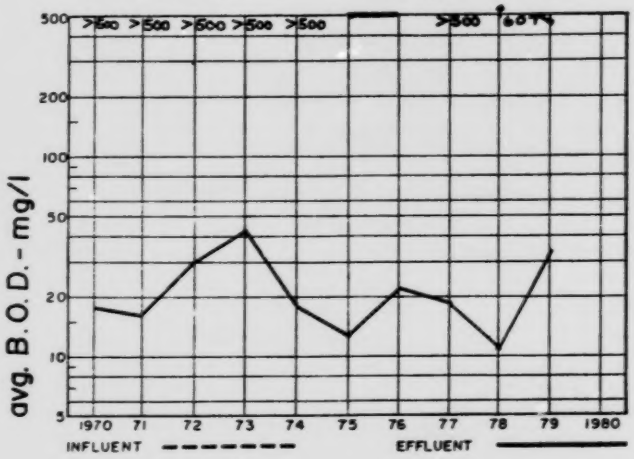
Size: One 50' dia x 38' swd
(79, 800 ft^3)

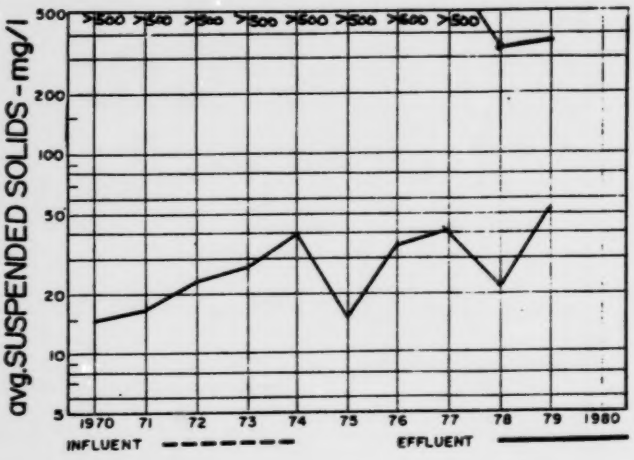
Sludge Recirculating Pump

Type: Carter Duplex Mod 805
Size: 200 gpm at 40' TDH









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000622 PRESTON WPCP

MUNICIPALITY : CAMBRIDGE (PRESTON)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 73,314
POPULATION SERVED : 19,000
PERCENT SERVED : 25.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 18.865 1000 M3 DESIGN BODS : 470.0 MG/L DESIGN SUSP.SOLIDS : 470.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	235.665	7.602	8.724	16.911	636.0	9.0	98	147.7	410.0	12.0	97	93.7	7.7	1.1	85	1.555
FEB	210.925	7.533	8.951	19.230	477.0	8.0	98	98.9	391.0	14.0	96	79.5	7.2	.6	91	1.392
MAR	272.601	8.794	11.974	20.457	351.0	9.0	97	93.2	269.0	20.0	92	67.8	6.2	.9	85	1.445
APR	277.702	9.257	12.885	23.180	483.0	18.0	96	129.6	317.0	40.0	87	76.9	6.9	1.2	82	1.583
MAY	262.777	8.477	9.996	20.320	514.0	51.0	90	121.6	397.0	100.0	74	78.0	8.0	3.5	56	1.182
JUN	227.394	7.580	8.683	19.780	569.0	74.0	86	112.5	553.0	177.0	67	85.5	8.9	4.9	44	.910
JUL	216.039	6.969	8.414	16.800	284.0	11.0	96	58.9	338.0	25.0	92	67.6	9.9	1.2	87	1.880
AUG	221.866	7.157	9.768	18.680	367.0	13.0	96	78.5	315.0	24.0	92	64.5	9.6	1.1	88	1.886
SEP	218.409	7.280	8.466	19.090	663.0	74.0	88	128.6	444.0	114.0	74	72.0	9.3	4.4	52	1.070
OCT	238.285	7.687	9.636	19.090	590.0	15.0	97	137.0	381.0	40.0	89	81.2	7.2	1.8	75	1.287
NOV	245.233	8.174	9.853	19.780	508.0	19.0	96	119.9	393.0	41.0	89	86.3	7.8	.6	92	1.766
DEC	253.263	8.170	10.955	18.820	354.0	83.0	76	68.6	325.0	32.0	90	74.2	9.3	2.0	78	1.849
TOTAL	2880.159							1295.5				927.7				17.805
AVERAGE		7.890			483.0	31.8	93		377.7	53.2	85		8.1	1.9	76	
MAXIMUM			12.885	23.180												
NO. OF SAMPLES					48	126			320	283			48	123		

DESIGN DATA - METRIC

DELHI

PROJECT: Haldimand-Norfolk
(Delhi Twp)
Delhi WPCP

PROJECT NO: 2-1007-5

TREATMENT: Conventional
Secondary

DESIGN FLOW: 3.18 1000 m^3/d

BOD - Raw Sewage - 170 mg/l

SS - Raw Sewage - 190 mg/l

PRIMARY TREATMENT

GRIT CHANNELS

Size: Two, each 7.7m x .5m x .6m
Volume (each) 2.437m^3
Retention (one)- 1.1 min

COMMINUTORS

Type: Chicago Pumps
Size: 254 mm

PRIMARY SETTLING TANK

Type: One, rectangular
Size: 4.3m x 16.0m x 3.7m swd
Volume: 257.304 m^3
Retention: 1.9 hr.

RAW SLUDGE PUMPS

Type: one Chicago Pump
Size: 5.678 l/s

SECONDARY TREATMENT

AERATION TANKS

Type: Two, rectangular
Size: each 15.2m x 5.6m x 5.0m swd
Volume: (total) 1018.3m^3
Retention: 7.7 hr

AERATORS

Type: Four, mechanical

SECONDARY SETTLING TANKS

Type: One, circular
Size: 14.0 i.d. x 1.8m swd
Volume: 282.8m^3
Retention: 3.2 hr.

Type: One, rectangular
Size: 13.1m x 4.6m x 2.4m swd
Volume: 141.8 m^3
Retention: 3.1 hr

RETURN SLUDGE PUMPS

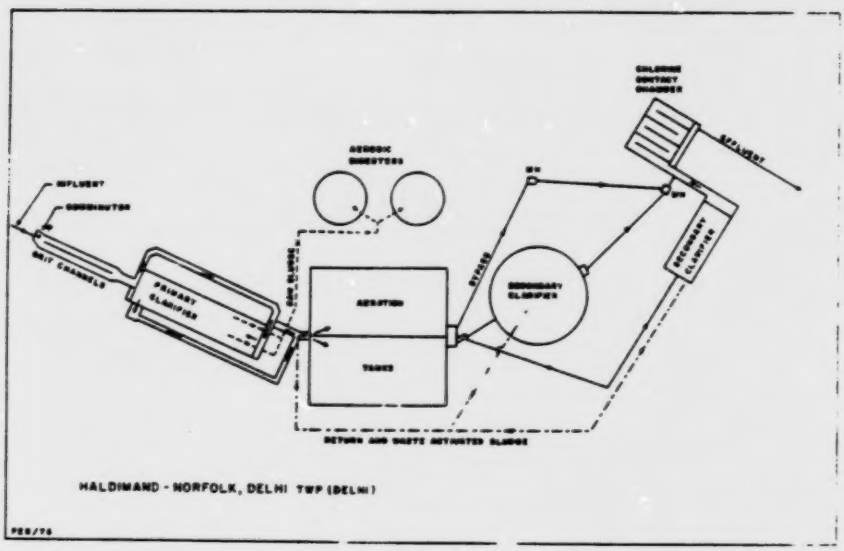
Type: Three, Hayward
Size: 11.355 l/s

AEROBIC DIGESTERS

Type: Two, circular
Size: (each) 4.1m i.d. x 5.2m swd
Volume: (each) 75.90 m^3

CHLORINE CONTACT TANK

Type: One, rectangular 6-pass
Size: 7.9m x 5.8m x 1.8m swd
Volume: 84.10m^3
Retention: 30 min.



HALDIMAND - NORFOLK, DELHI TWP (DELHI)

PEB/76

DESIGN DATA - IMPERIAL

PROJECT: Haldimand-Norfolk
(Delhi Twp)
Delhi WPCP

PROJECT NO: 2-1007-75

TREATMENT: Conventional

DESIGN FLOW: 0.7 MIGD

BOD - Raw Sewage - 170 mg/l

SS Raw Sewage - 190 mg/l

PRIMARY TREATMENT

GRIT CHANNELS

Size: Two, each 25.25' x 1.7' x 2'
Volume (each) 536 IG
Retention (one): 1.1 min

COMMINUTORS

Type: Chicago Pumps
Size: 10-inch

PRIMARY SETTLING TANK

Type: One, rectangular
Size: 14' x 54' x 12' swd
Volume: 56,600 IG
Retention: 1.9 hr

RAW SLUDGE PUMPS

Type: One, Chicago Pumps
Size: 75 IGPM

SECONDARY TREATMENT

AERATION TANKS

Type: Two, rectangular
Size: each 50' x 21.8' x 16.5' swd
Volume: (total) 234,000 IG
Retention: 7.7 hr

AERATORS

Type: Four, mechanical

SECONDARY SETTLING TANKS

Type: One, circular
Size: 46' i.d. x 6' swd
Volume: 62,200 IG
Retention: 3.2 hr

Type: One, rectangular
Size: 43' x 15' x 7.75' swd
Volume: 31,200 IG
Retention: 3.1 hr

RETURN SLUDGE PUMPS

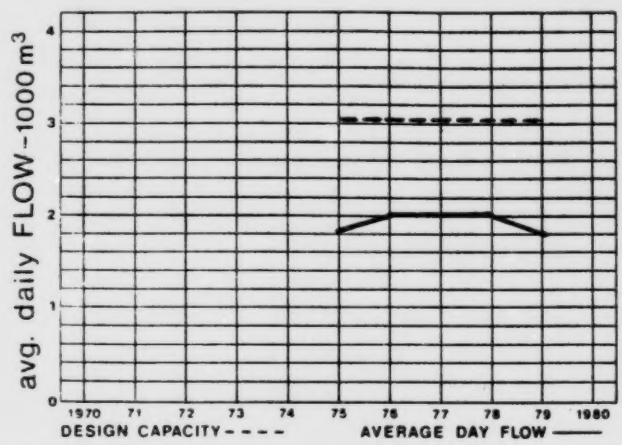
Type: Three, Hayward
Size: 150 IGPM each

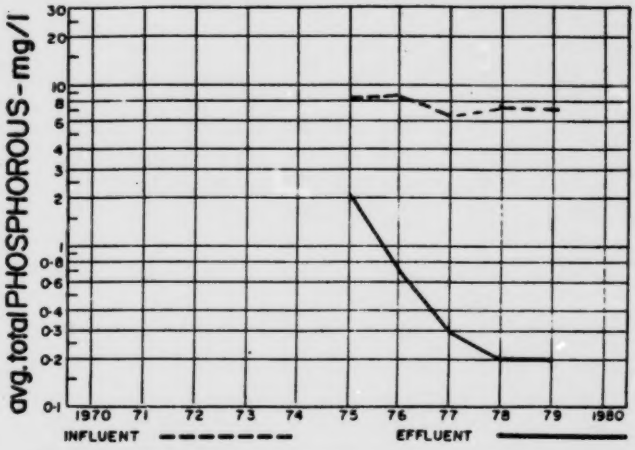
AEROBIC DIGESTERS

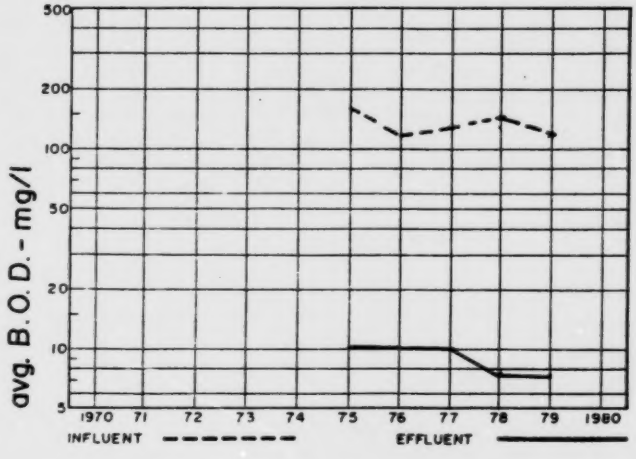
Type: Two, circular
Size: (each) 13.6' id x 17' swd
Volume: (each) 3680 ft^3

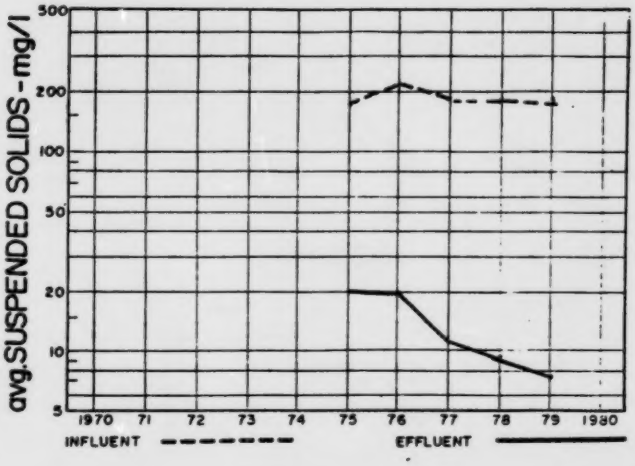
CHLORINE CONTACT TANK

Type: One, rectangular 6-pass
Size: 26' x 19' x 6' swd
Volume: 18,500 IG
Retention: 30 min









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120001425 DELHI MPCP

MUNICIPALITY : DELHI
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 14,931
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.182 1000 M3 DESIGN BODS : 170 MG/L DESIGN SUSP.SOLIDS : 150 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	75.259	2.428	2.973	4.384	170.0	4.1	97	12.4	188.0	9.2	95	13.4	9.9	.2	97	.730
FEB	66.690	2.382	3.259	6.819	145.0	7.2	95	9.1	187.0	7.5	95	11.9	8.8	.3	96	.567
MAR	54.957	1.773	2.496	4.910	130.0	4.3	96	6.8	199.0	8.8	95	10.4	7.4	.4	94	.385
APR	49.480	1.650	2.070	4.360	110.0	6.2	94	5.1	181.0	14.7	91	8.2	6.0	.5	90	.269
MAY	50.310	1.620	2.040	4.550	130.0	14.5	88	5.8	170.0	8.9	94	8.1	7.2	.2	97	.352
JUN	49.120	1.640	2.250	4.550	110.0	4.5	95	5.1	151.5	6.8	95	7.1	6.8	.2	97	.324
JUL	46.910	1.510	1.870	4.000	148.0	9.0	93	6.5	183.0	4.5	97	7.4	9.9	.1	98	.456
AUG	47.010	1.520	2.040	6.360	133.0	9.2	93	5.8	172.0	3.5	97	7.9	7.5	.2	97	.343
SEP	48.460	1.620	2.090	4.360	128.0	4.0	96	6.0	170.0	4.7	97	8.0	7.9	.1	98	.378
OCT	59.930	1.930	2.420	4.550	112.0	3.7	98	6.4	185.0	4.4	97	10.8	6.0	.1	98	.354
NOV	54.830	1.830	2.230		90.0	20.0	77	3.8	166.0	7.6	95	8.6	7.4	.7	89	.385
DEC	54.050	1.740	2.470	3.640	125.0	6.5	94	6.4	155.0	5.7	96	8.0	8.8	.1	97	.466
TOTAL	657.006							79.7				110.2				4.987
AVERAGE		1.804			127.5	7.7	93		173.9	7.1	95		7.8	.2	96	
MAXIMUM			3.259	6.819												
NO. OF SAMPLES					19	20			133	128			19	23		

DESIGN DATA - METRIC

DUNNVILLE

PROJECT: Town of Dunnville WPCP
PROJECT NO: 2-1010-75
TREATMENT Conventional Secondary

DESIGN FLOW: $7.7 \times 10^3 m^3/d$
BOD - Raw Sewage 180 mg/l

MAIN P.S.
Pumps: Three, each 211.96 l/s

AERATED GRIT TANK
Size: 5.0m x 4.1m x 3.05m awd
Volume: 63.2 m^3
Retention: 11 min

AERATION TANKS
Type: Two
Size: each tank 10.7m x 7.6m x 4.5m
Volume (total): 1463.8 m^3
Retention: 4.5 hr.
Blowers: Two, each 2026.8 l/s
Aerators: Dorr-Inka grids

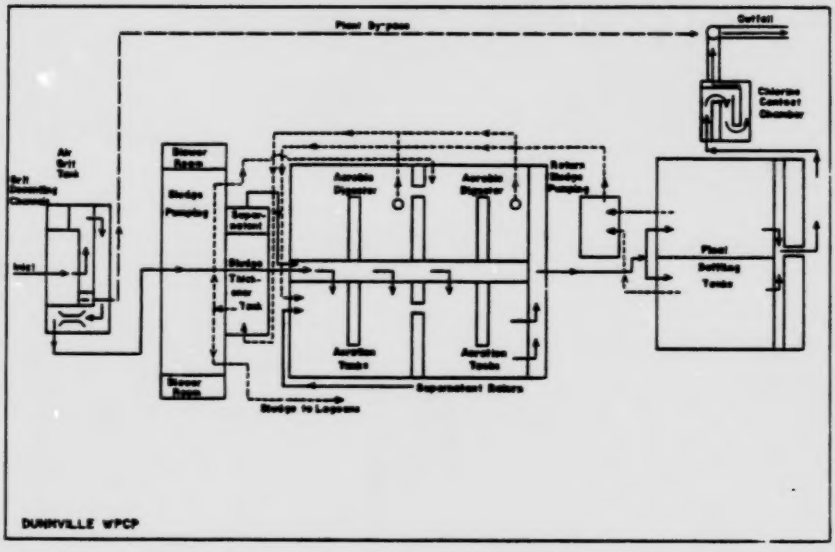
FINAL SETTLING
Size: Two, each 21.9m x 5.5m x 3.7m
Volume: 881.9 m^3
Retention: 2.7 hr

CHLORINATION
Size: One, 10.9m x 4.5m x 3.7m
Volume: 180.0 m^3

SLUDGE HANDLING

AEROBIC DIGESTERS
Size: Four cells, each 10.6m x 7.6m x 4.5m
Volume: Total 1463.8m^3

SLUDGE LAGOONS
Size: Three, each 40.2m x 24.4m x 1.4m
Area: 13,247.5m^2



DUNNVILLE WPCP

DESIGN DATA - IMPERIAL

PROJECT: Town of Dunnville WPCP

PROJECT NO. 2-1010-75

TREATMENT: Conventional Secondary

DESIGN FLOW: 1.7 MIGD

BOD - Raw Sewage 180 mg/l

MAIN P.S.
Pumps: Three, each 2800 gpm

AERATED GRIT TANK
Size: 16.5'x13.5'x10' awd
Volume: 13,900 I.G.
Retention: 11 min

AERATION TANKS
Type: Two,
Size: each tank 35'x25'x14.75'
Volume(total): 322,000 I.G.
Retention: 4.5 hr
Blowers: Two, each 4850 cfm
Aerators: Dorr-Inka grids

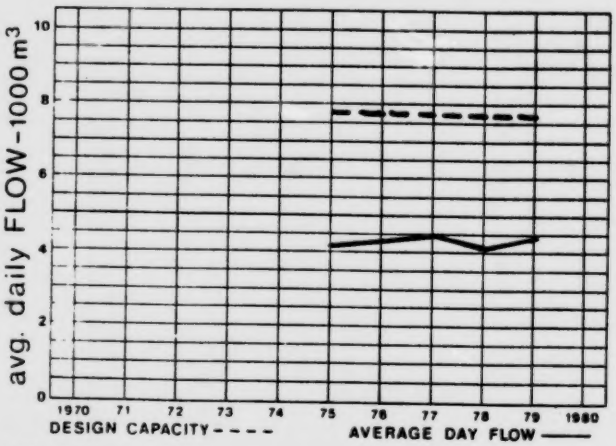
FINAL SETTLING
Size: Two, each 72'x18'x12'
Volume: 194,300 I.G.
Retention: 2.7 hr

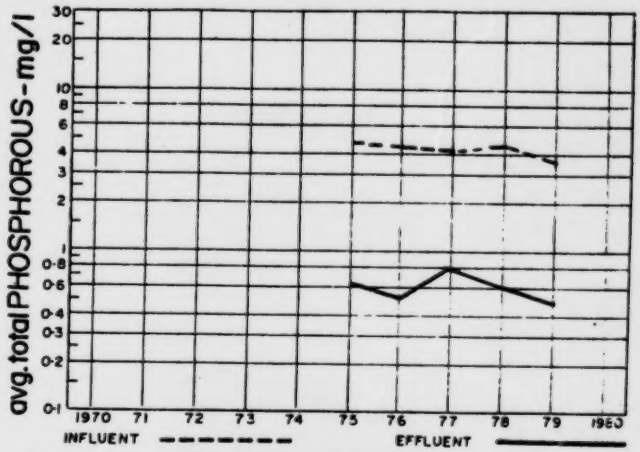
CHLORINATION
Size: One, 36'x14.7'x12'
Volume: 39,600 I.G.
Retention: 34 min

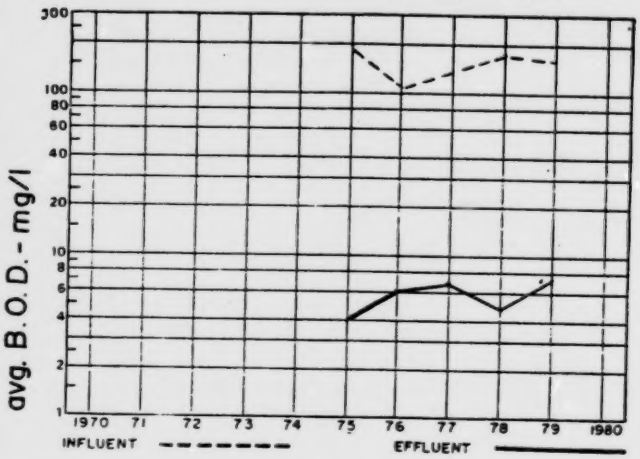
SLUDGE HANDLING

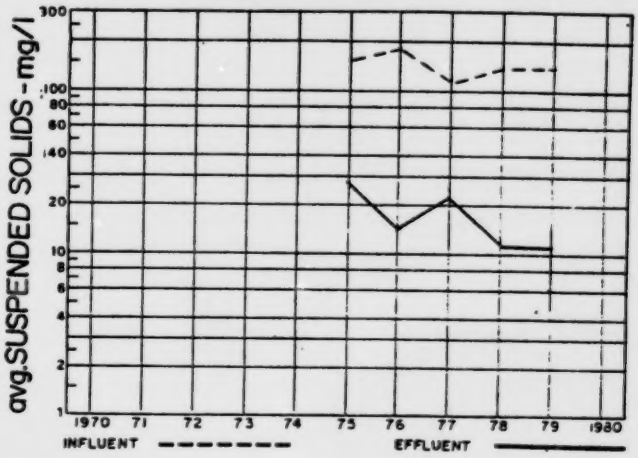
AEROBIC DIGESTERS
Size: Four cells, each 35'x25'x14.75'
Volume: Total 322,000

SLUDGE LAGOONS
Size: Three, each 132'x80'x4.5'
Area: 142,600 ft^2









ONTARI · MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER · 120001443 MUNICIPAL PLANT

MUNICIPALITY : DUNNVILLE
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 11,408
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 7.728 1000 M3 DESIGN BOD5 : 182.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	151.755	4.895	6.296	17.275	132.0	6.2	95	19.0	111.0	11.2	89	15.1	2.7	.4	85	.349
FEB	109.904	3.925	6.673	9.547	173.0	7.2	95	18.2	144.0	11.0	92	14.6	4.1	.7	82	.374
MAR	179.687	5.792	9.615	10.910	102.0	7.2	92	17.0	193.0	16.0	91	31.8	3.5	.4	88	.557
APR	178.377	5.940	8.690	12.740	115.0	5.0	95	19.6	147.0	12.0	91	24.0	3.2	.3	87	.501
MAY	138.870	4.470	5.500	8.180	128.0	6.5	94	16.8	118.0	11.0	90	14.8	3.7	.6	82	.426
JUN	114.710	3.820	4.350	9.090	132.0	4.0	98	14.6	173.0	10.0	94	18.6	4.3	.9	78	.389
JUL	96.009	3.090	4.510	14.540	141.0	4.0	97	13.1	129.0	7.0	94	11.7	4.9	.7	85	.405
AUG	98.560	3.170	5.080	11.360	105.0	10.0	90	9.3	116.0	10.0	91	10.4	3.6	.5	85	.307
SEP	120.362	4.010	8.860	14.090	99.0	4.2	95	11.4	154.8	12.4	91	17.1	3.1	.7	76	.291
OCT	131.830	4.250	6.550	10.450	320.0	12.5	96	40.5	202.0	12.7	93	24.9	3.9	.7	82	.433
NOV	146.285	4.876	6.790	12.290	325.0	11.0	96	45.9	182.2	15.2	91	24.4	3.5	.5	83	.432
DEC	151.900	4.900	9.780	11.360	117.0	13.0	88	15.7	119.0	12.7	89	18.1	3.1	.4	87	.411
TOT	1618.229							241.7				224.0				4.875
AVERAGE		4.428			157.4	7.5	95		149.0	11.7	92		3.6	.5	83	
MAXIMUM			9.780	17.275												
NO. OF SAMPLES					26	24			133	147			116	155		

DESIGN DATA - METRIC

FERGUS

PROJECT: Town of Fergus WPCP

PROJECT NO.: 2-0023-58

TREATMENT: Conventional Secondary

DESIGN FLOW: 5.00 $10^3 m^3/d$

BOD - Raw Sewage 200 mg/l
Removal 90%

SS - Raw Sewage 200 mg/l
Removal 90%

PRIMARY TREATMENT

GRIT REMOVAL
Type: Dorr-Oliver, Type T Detritor

COMMINUTION:
Type: Barminutor
Size: Model B (457.2mm)

PRIMARY SEDIMENTATION:
Type: Dorr-Oliver
Size: One 12.2m x 12.2m x 2.7m swd
Volume: 409.14 m^3
Detention: 2.0 hours
Loading: Surface: 35.58 $m^3/m^2.d$

SECONDARY TREATMENT

AERATION TANKS:
Type: Mechanical Single Pass
Size 1, 21.9m x 7.3m x 3.2m swd
1, 21.9m x 7.3m x 3.7m swd
Volume (total) - 1222.874 m^3
Retention: (total) 5.9 hours

Aerators - Ames Crosta

SECONDARY SEDIMENTATION:
Type: #1 Dorr / #2 Eimco
Size: Two, 10.7m x 10.7m x 2.7m swd
Volume (total) 622.802 m^3
Detention: 3 hours
Loading - Surface 22.0 $m^3/m^2.d$

CHLORINATION:
Type: Wallace & Tiernan V-100

CHLORINE CONTACT CHAMBER:
Size: 12.2m x 4.6m x 2.1m swd
Volume: 118.196 m^3
Detention: 34 min.

OUTFALL
- to Grand River

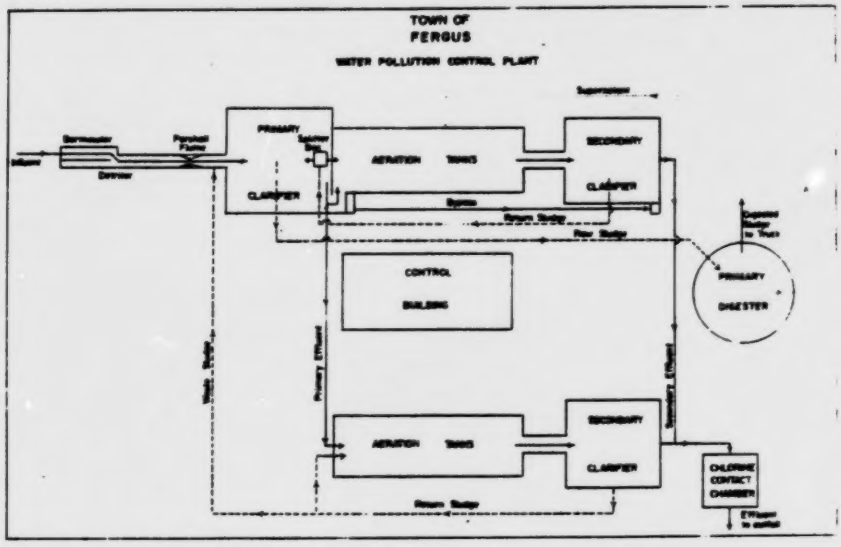
SLUDGE HANDLING

Digestion System

Type: Single stage, with floating cover and one Dorr draft tube mixer
Size: 10.7m dia. x 6.7m swd (.643 m^3)
Loading: 22.4 $kg/m^3/mo$

Drying Beds

total area, 668.88 m^2
(discontinued use in 1964)



DESIGN DATA - IMPERIAL

PROJECT No 2-0023-58
TREATMENT Conventional Secondary
DESIGN FLOW 1.1 mgd
BOD Raw Sewage 200 mg/l
Removal 90%
SS Raw Sewage 200 mg/l
Removal 90%

PRIMARY TREATMENT

GRIT REMOVAL:
Type: Dorr-Oliver, Type T Detritor

COMMINUTION:
Type: Barminutor
Size: Model B (18")

PRIMARY SEDIMENTATION:
Type: Dorr-Oliver
Size: One 40' x 40' x 9' swd
Volume: 90,000 I. Gal.
Detention: 2.0 hours
Loading: Surface: 687 $gal/ft^2/day$

SECONDARY TREATMENT

AERATION TANKS:
Type: Mechanical Single Pass
Size 1, 72' x 24' x 10.7' swd
1, 72' x 24' x 12'2" swd
Volume (total) 268,000 I. Gal
Retention: (total) 5.9 hours

Aerators - Ames Crosta

SECONDARY SEDIMENTATION:
Type: #1 Dorr / #2 Eimco
Size: Two, 35' x 35' x 9' swd
Volume (total) 137,000 I. Gal.
Detention: 3 hours
Loading - Surface 450 $gal/ft^2/day$

CHLORINATION:
Type: Wallace & Tiernan V-100

CHLORINE CONTACT CHAMBER:
Size: 40' x 15' x 7' swd
Volume: 26,000 I. Gal.
Detention: 34 min.

OUTFALL - to Grand River

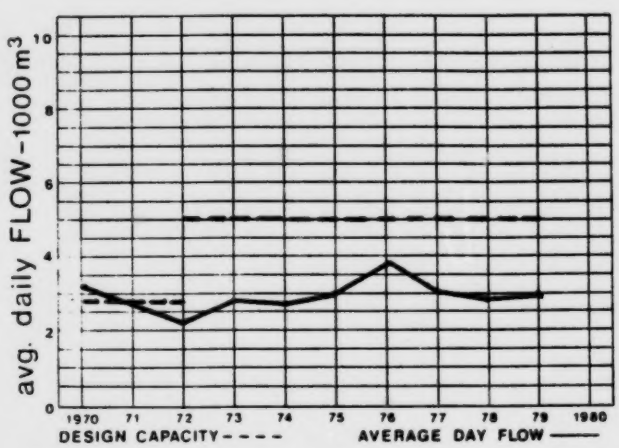
SLUDGE HANDLING

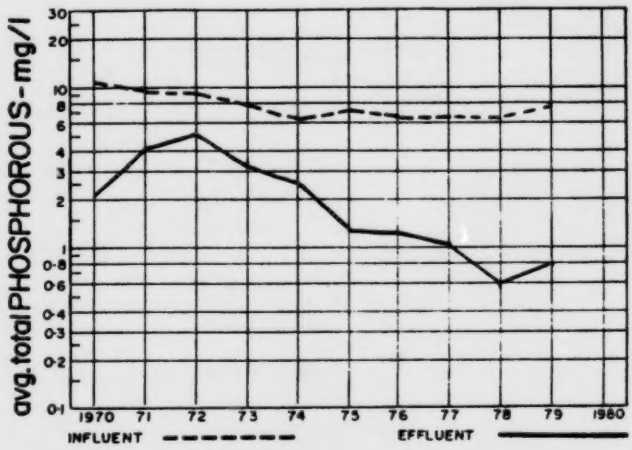
Digestion System

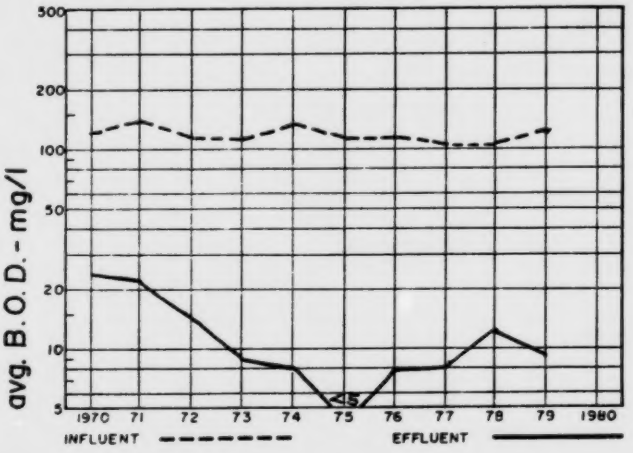
Type: Single stage, with floating cover and one Dorr draft tube mixer
Size: 35' dia x 22' swd (22,700 cu ft or 141,000 gal)
Loading: 1.40 $lb/ft^3/mo$

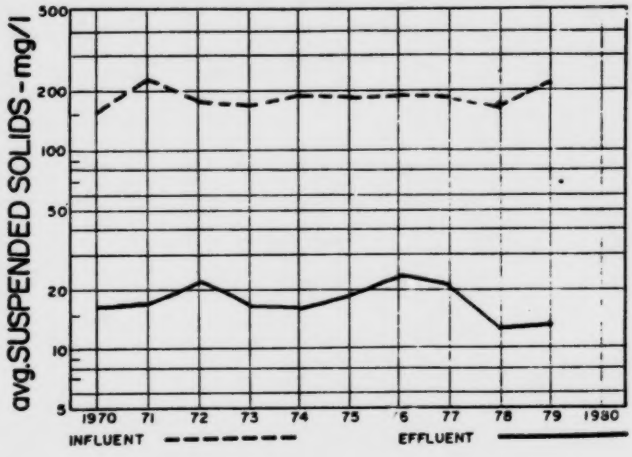
Drying Beds

- total area, 7,200 sq ft (discontinued use in 1964)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000249 FERGUS WPCP

MUNICIPALITY : FERGUS
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 5,981
POPULATION SERVED : 5,950
PERCENT SERVED : 99.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 8.000 1000 M3 DESIGN BODS : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	76.518	2.468	4.564	4.728	130.0	7.0	94	9.4	260.0	10.4	96	19.0	9.7	.9	90	.673
FEB	63.126	2.255	3.369	7.092	190.0	15.0	92	11.0	360.0	10.2	97	22.0	10.0	1.0	90	.568
MAR	170.243	5.492	7.560	8.460	68.0	3.0	95	11.0	95.0	10.9	88	14.3	3.3	.5	84	.477
APR	158.937	5.297	8.003	8.463	69.5	4.6	93	10.3	115.0	11.0	90	18.5	4.5	.7	84	.612
MAY	87.475	2.821	4.778	7.098	157.5	18.0	88	12.2	187.5	14.6	92	15.1	5.5	.8	84	.408
JUN	69.859	2.328	2.907	8.000	130.0	20.0	84	7.6	240.0	13.2	94	15.8	9.0	.9	89	.565
JUL	65.081	2.099	2.443	4.300	135.0	3.0	97	8.5	210.0	11.5	94	12.9	13.0	.9	92	.788
AUG	63.700	2.054	2.500	7.600	150.0	5.2	96	9.2	217.5	13.0	94	13.0	10.5	1.0	90	.605
SEP	61.000	2.033	2.700	6.900	115.0	10.0	91	6.4	185.0	15.6	91	10.3	7.9	1.0	87	.421
OCT	68.700	2.216	2.500	4.400	120.0	6.5	94	7.7	195.0	19.4	90	12.0	9.1	.9	89	.561
NOV	94.100	3.138	6.000	8.400	85.0	2.4	97	7.7	220.0	22.3	89	18.6	7.0	.7	88	.584
DEC	110.000	3.548	7.900	8.500	95.0	18.0	81	8.4	160.0	18.4	88	15.5	5.9	.9	84	.548
TOTAL	1088.739							109.9				185.5				6.808
AVERAGE		2.979			120..	9.3	92		203.7	14.2	93		7.9	.8	89	
MAXIMUM			8.003	8.500												
NO. OF SAMPLES					16	15			16	258			16	259		

DESIGN DATA - METRIC

HALDIMAND (CALEDONIA)

Project: Haldimand-Norfolk Caledonia WPCP

Project No: 2-1009-75

Treatment: Conventional Secondary

Design Flow: 2.273 $10^3 m^3/d$

PRIMARY TREATMENT

RAW SEWAGE PUMPING (at plant)

Type: Two, CHICAGO PUMP
Size: each .054 l/s @ 8.5m TDH

Type: One, SMART TURNER 3HYVB5
Size: 37.85 l/s @ 8.2m TDH

Type: One, CHICAGO PUMP UNLHB4
Size: 25.132 l/s @ 8.2m TDH

Comminutors
Type: Two, CHICAGO PUMP

Bar Screen
Location: in bypass channel

Grit Channels
Size: Two, each 6.1m x 0.5m x .45m awd
Volume (each): 1.491 m^3
Retention: 0.9 min (one)

Primary Clarifiers
Size: One, 5.2m x 14.6m x 2.8m awd
Volume: 187.295 m^3

Size: One, 6.1m x 6.1m x 3.05m awd
Volume: 113.650 m^3
Retention: (both): 3.2 hr

Raw Sludge Pumps
Type: Two, CHICAGO PUMPS VTXH 44091
Size: each, 6.283 l/s @ 6.1m TDH

Type: One, CHICAGO PUMPS HBSLHC4
Size: 3.785 l/s @ 12.8m TDH

SECONDARY TREATMENT

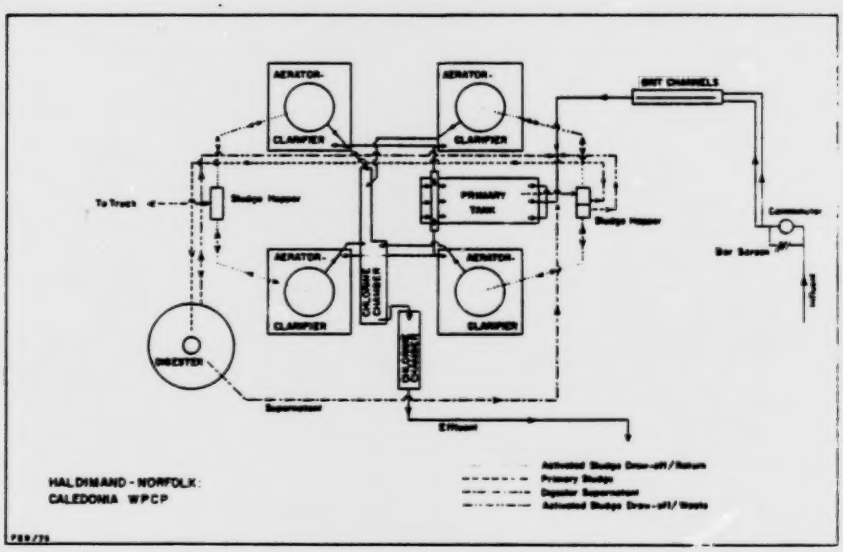
Aerator-Clarifiers
Type: Rectangular clarifier
Size: Four, each 9.1m x 9.1m x 3.2m
Volume (total): 31.822 m^3
Retention (total): 11.3 hr.

Chlorination

Contact Chamber
Size: One, 7.3m x 2.6m x 1.6m
Volume: 31.822 m^3
Retention: 20 min.

Chlorinator
Type: W and T LD 6069

Digester (unheated)
Size: One, 9.1 dia x 5.2m awd
Volume: 363.68 m^3



DESIGN DATA - IMPERIAL

Project: Haldimand-Norfolk Caledonia WPCP

Project No: 2-1009-75

Treatment: Conventional Secondary Sludge

Design Flow: 0.5 M.I.G.D.

PRIMARY TREATMENT

RAW SEWAGE PUMPING (at plant)

Type: Two, CHICAGO PUMP
Size: each 1038 IGPD @ 28' TDH

Type: One, SMART TURNER 3HTVB5
Size: 500 IGPH @ 27' TDH

Type: One, CHICAGO PUMP UNLHB4
Size: 332 IGPH @ 27' TDH

Comminutors
Type: Two, CHICAGO PUMP

Bar Screen
Location: in bypass channel

Grit Channels
Size: Two, each 20' x 1.75' x 1.5' awd
Volume (each): 328 I.G.
Retention: 0.9 min (one)

Primary Clarifiers:
Size: One, 17' x 48' x 8.1' awd
Volume: 41,200 I.G.

Size: One, 20' x 20' x 10' awd
Volume: 25,000 I.G
Retention: (both): 3.2 hr.

Raw Sludge Pumps
Type: Two, CHICAGO PUMPS VTXH 44091
Size: each, 83 I.G.P.M. @ 20' TDH

Type: One, CHICAGO PUMPS HBSLHC4
Size: 50 I.G.P.M. @ 42' TDH

SECONDARY TREATMENT

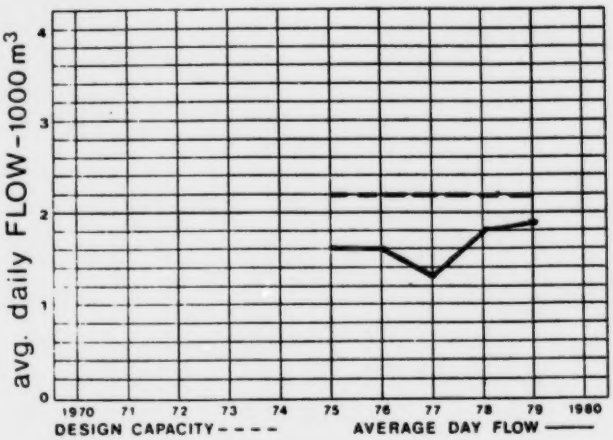
Aerator-Clarifiers
Type: Rectangular clarifier
Size: Four, each 30' x 30' x 10.5'
Volume (total): 236,000 I.G.
Retention (total): 11.3 hr

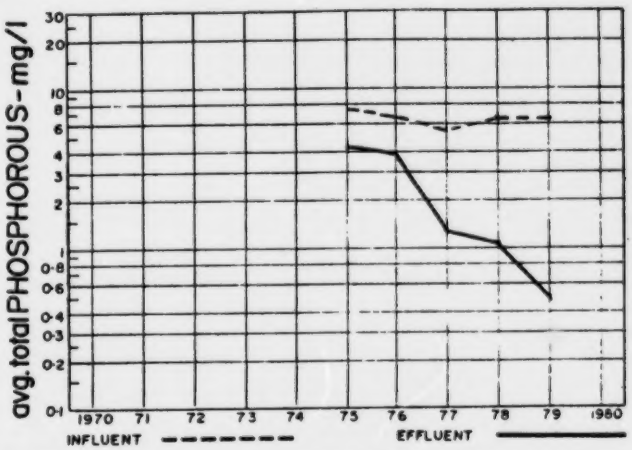
Chlorination

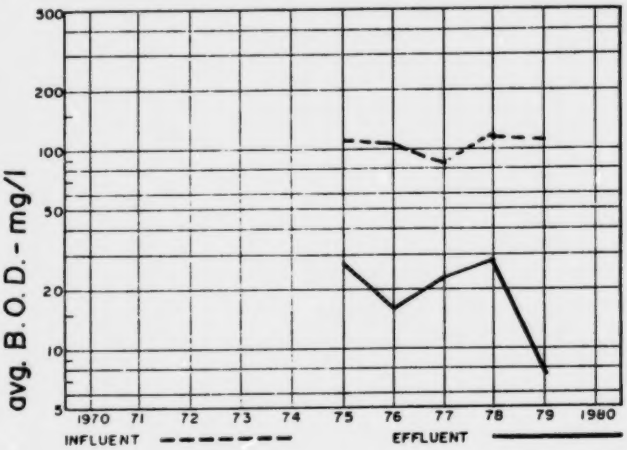
Contact Chamber:
Size: One, 24' x 8.5' x 5.5'
Volume: 7,000 I.G.
Retention: 20 min.

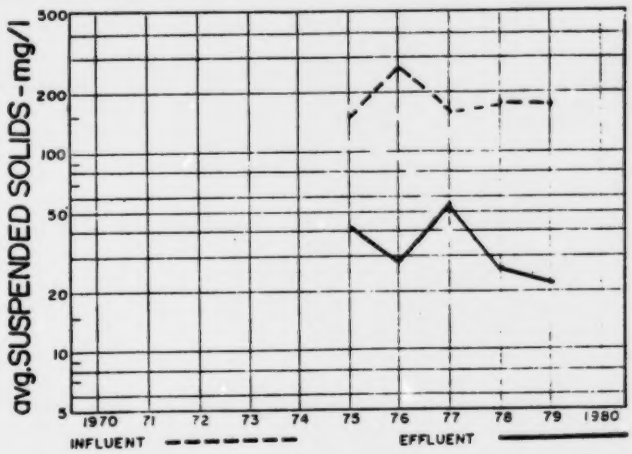
Chlorinator:
Type: W and T LD 6069

Digester (unheated)
Size: One, 30' dia. x 17' awd
Volume: 80,000 I.G.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120001452 CALEDONIA PLANT

MUNICIPALITY : HALDIMAND (CALEDONIA)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 18,427
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.273 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	62.748	2.024	4.741	6.819	127.0	19.0	85	6.7	180.0	35.0	80	9.0	7.0	1.2	82	.364
FEB	47.951	1.712	3.896	5.910	130.0	14.0	89	5.5	179.0	38.0	78	6.7	6.5	1.1	83	.259
MAR	86.788	2.800	4.982	6.137	67.0	8.0	88	5.1	117.0	17.0	85	8.6	4.0	.5	87	.304
APR	91.620	3.054	5.480	6.460	89.0	17.0	80	6.5	132.0	17.0	87	10.5	5.3	.4	92	.449
MAY	52.488	1.690	2.520	4.200	175.0	6.0	96	6.8	170.0	20.0	88	7.8	5.8	.6	88	.270
JUN	39.800	1.330	1.730	3.910	125.0	5.7	95	4.7	202.0	25.0	87	7.0	7.4	.6	91	.269
JUL	44.920	1.450	2.310	4.000	56.0	3.5	93	2.3	135.0	22.0	83	5.0	6.6	.4	93	.278
AUG	47.410	1.530	2.130	4.550	100.0	5.1	94	4.4	148.0	17.3	88	6.1	6.8	.4	93	.303
SEP	48.048	1.600	3.990	4.550	95.0	6.0	93	4.2	198.0	13.0	93	8.8	6.2	.3	95	.283
OCT	49.760	1.600	2.240	4.550	148.0	3.5	97	7.1	145.0	23.0	84	6.0	6.3	.4	93	.294
NOV	55.990	1.870	3.540	5.460	97.0	3.8	96	5.2	175.0	16.0	90	8.9	6.7	.3	95	.358
DEC	64.990	2.100	5.100	4.550	80.0	2.5	96	5.0	155.0	15.0	90	9.0	6.3	4	93	.383
TOTAL	692.513							68.2				94.2				3.812
AVERAGE		1.897			107.4	7.8	92		161.3	21	88		6.2	.5	90	
MAXIMUM			5.480	6.819												
NO. OF SAMPLES					23	22			23	50			23	23		

DESIGN DATA - METRIC

HALDIMAND (HAGERSVILLE)

PROJECT: Haldimand-Norfolk (Hagersville) WPCP

PROJECT NO.: 1-1001-72 TREATMENT: Conventional Secondary

DESIGN FLOW: 0.909 $10^3 m^3/d$

PUMPING STATIONS:

Parkview & Mud St. P.S.
Type: Smith & Loveless
Pumps: Two, S & L 482
delivering 20.44 l/s @ 7.6m TDH

Mary Street P.S.
Type: Smith & Loveless
Pumps: Two, Allis Chalmers 300F7M1
delivering 15.90 l/s @ 6.2m TDH

Tuscarora St.
Type: built on site
Pumps: One, Smart Turner
495382-2-1/2HXVS
(with identical unit as stand-by)

BAR SCREEN
Bars: 3.8 cm x0.64 cm

COMMINUTOR
Type: One Procor C785
Size: 10R, 45 r/min

RAW SEWAGE PUMPS
Type: Two, Smart Turner 3HYVBT
Size: 18.93 l/s @ 6.1m TDH

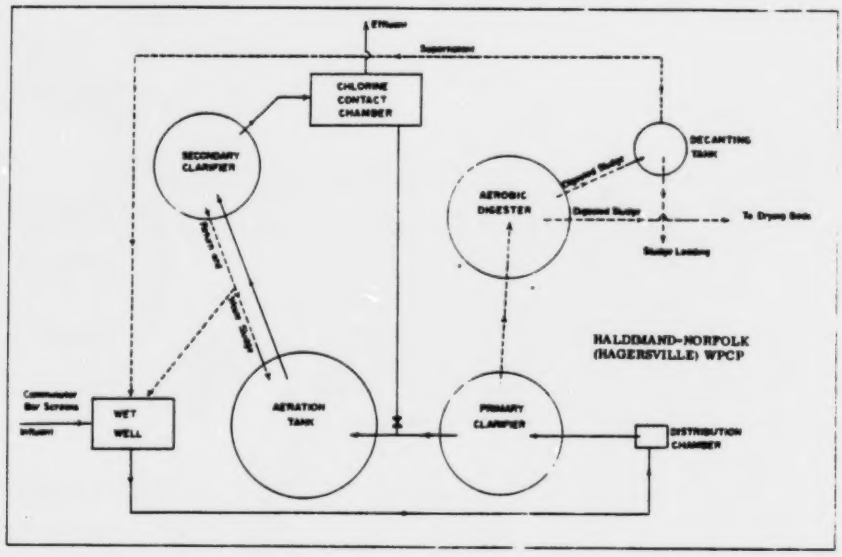
PRIMARY CLARIFIER
Size: circular, 7.7m dia. x 3.1m swd
139.11 m^3
Retention: 2.9 hr.
Loading-surface: 24.93 $m^3/m^2 \cdot d$

AERATION TANK
Size: circular, 11.0m dia. x 2.4m swd
230.94 m^3
Retention 4.8 hr.
Mechanism: 'Vortair' Mechanical

SECONDARY CLARIFIER
Size: circular, 7.3m dia. x 2.7m swd
115.47 m^3
Retention: 2.4 hr.
Loading-surface: 26 94 $m^3/m^2 \cdot d$

CHLORINE CONTACT CHAMBER
Size: 1.8m x 4.7m x 2.1m
18.64 m^3
Retention: 25 min.

SLUDGE DRYING BEDS
Area: 706.0m^2



DESIGN DATA - IMPERIAL

PROJECT: Haldimand-Norfolk (Hagersville) WPCP

PROJECT NO. 1-1001-72

DESIGN FLOW: 0.2 MIGD

PUMPING STATIONS:

Parkview & Mud St. P.S.
Type: Smith & Loveless
Pumps: Two, S & L 482
delivering 270 gpm @ 25'TDH

Mary Street P.S.
Type: Smith & Loveless
Pumps: Two, Allis Chalmers 300F7M1
delivering 257 USgpm @ 20'TDH

Tuscarora St.
Type: built on site
Pumps: One, Smart Turner
495382-2-1/2HXVS
(with identical unit as stand-by)

BAR SCREEN
Bars: 1½" x ¼"

COMMINUTOR
Type: One Procor C785
Size: 10R, 45 RPM

RAW SEWAGE PUMPS
Type: Two, Smart Turner 3HYVBT
Size: 250 Igpm @ 20' TDH

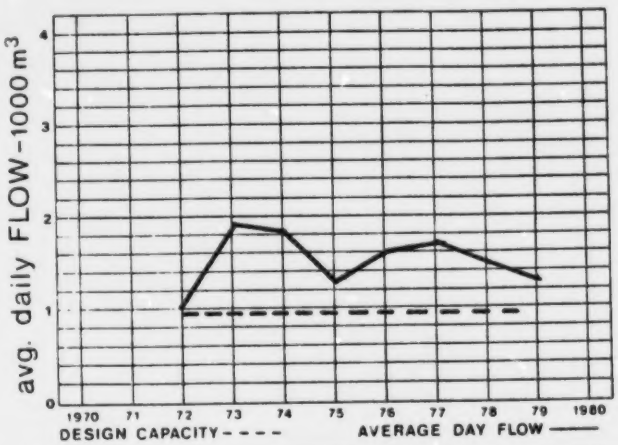
PRIMARY CLARIFIER
Type: circular, 25'dia. x 10'swd
Size: 30600 I.G.
Retention: 2.9 hr
Loading-surface: 510 I.gal/ft^2/day

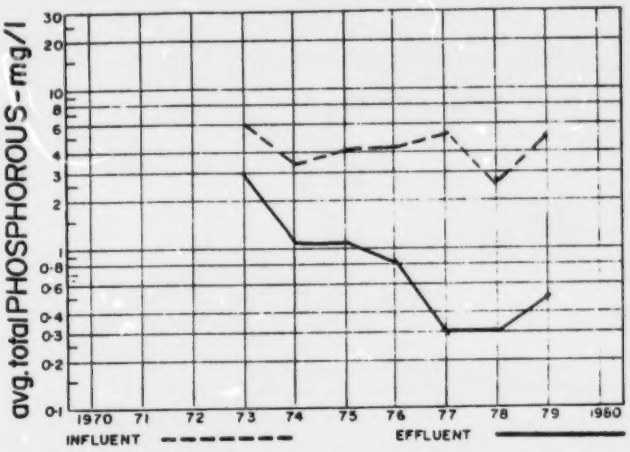
AERATION TANK
Type: circular, 36' dia. x 8'swd
Size: 50,900 I.G.
Retention: 4.8 hr.
Mechanism: 'Vortair' Mechanical

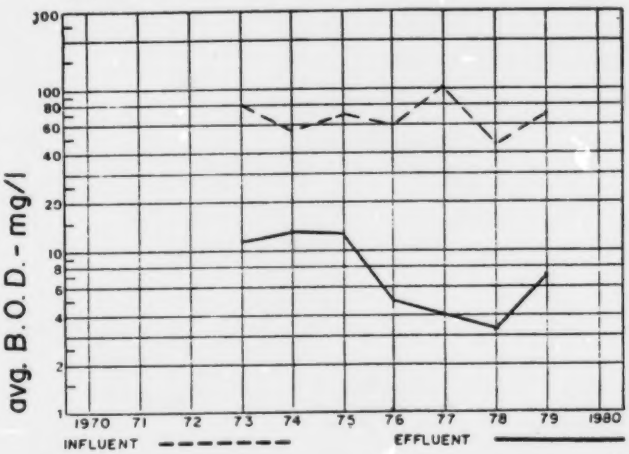
SECONDARY CLARIFIER
Type: circular 24' dia x 9'swd
Size: 25,400 I.G.
Retention: 2.4 hr
Loading-surface: 551 I.G./ft^2/day

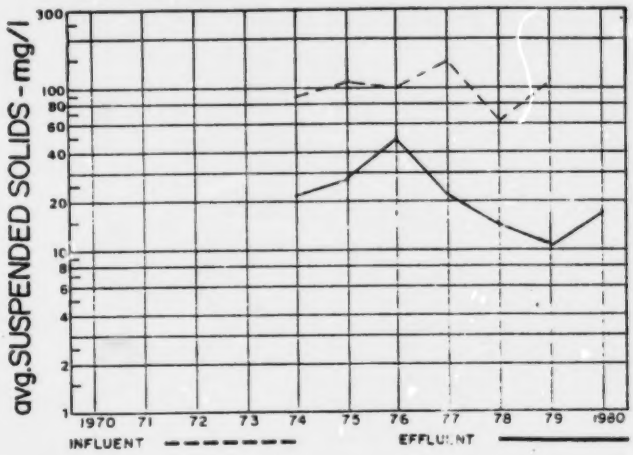
CHLORINE CONTACT CHAMBER
Size: 6' x 15.5' x 7'
4100 I.G.
Retention: 25 min

SLUDGE DRYING BEDS
Area: 7600 ft^2









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001024 HAGERSVILLE WPCP

MUNICIPALITY : HALDIMAND (HAGERSVILLE)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION 16,427
POPULATION SERVED 2,450
PERCENT SERVED 14.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	51.511	1.662	2.355		50.0	5.3	89	2.3	44.0	14.0	68	1.5	3.0	.4	86	.134
FEB	45.742	1.634	2.300		44.0	6.5	85	1.7	73.0	7.5	89	2.9	3.5	.2	94	.151
MAR	65.021	2.097	2.355		48.0	4.2	91	2.8	70.0	9.0	87	3.9	3.5	.5	85	.195
APR	57.066	1.902	2.302		25.0	2.7	89	1.2	40.0	13.0	67	1.5	2.4	.5	79	.108
MAY	37.537	1.210	1.998		41.5	3.7	90	1.4	80.0	10.5	86	2.6	3.4	.3	90	.116
JUN	30.366	1.012	1.184		90.0	9.0	90	2.4	177.5	14.0	92	4.9	7.7	.4	93	.220
JUL	23.188	.748	1.258		79.0	9.1	88	1.6	131.6	12.3	90	2.7	9.5	.6	93	.205
AUG	30.702	.990	1.840		122.0	16.0	86	3.2	215.0	46.0	78	5.1	4.0	1.2	70	.087
SEP	25.194	.863	2.714		160.0	6.5	95	3.8	252.0	10.0	96	6.0	8.8	.2	97	.217
OCT	36.637	1.181	2.185		60.0	9.5	84	1.8	95.0	17.5	81	2.8	4.9	.8	86	.155
NOV	43.524	1.451	2.522		54.0	9.0	83	1.9	92.5	19.5	78	3.1	4.4	.5	87	.168
DEC	48.923	1.513	2.245		82.5	5.5	93	3.6	97.5	14.5	85	3.8	5.6	.4	92	.245
TOTAL	493.411							28.1				41.5				2.001
AVERAGE		1.355			71.3	7.2	89		114.0	15.6	86		5.0	.5	89	
MAXIMUM			2.714													
NO. OF SAMPLES					25	25			25	25			25	24		

OCT

DESIGN DATA - METRIC

KITCHENER

PROJECT: City of Kitchener WPCP

PROJECT NO.: 1-0314-72

TREATMENT: Conventional Secondary

DESIGN FLOW: 122.74 $10^3 m^3/d$

RAW SEWAGE - BOD 275 mg/l
- SS 300 mg/l

PRIMARY TREATMENT

Screening
Type: Three (incl. one standby) mechanically cleaned bar screens by Dorr-Oliver-Long. Set in concrete channels 1.5m x 1.1m deep at 75° incline.
Size: Bars are 9.5 mm thick 50.8mm wide with 25.4mm clear between bars.

Grit Removal
Type: Two Detritor tanks
Size: 3.25m² x 762mm deep
Volume: 113.906 $103m^3/d$

Primary Clarifiers
Size: Four 57.9m x 19.8m x 3.7m swd
Volume: 4160.208 m^3/tank

SECONDARY TREATMENT

Aeration Tanks
Size: 8 Concrete cells 6.04m² with 4.7m swd with mixed liquor
Volume: 1755.84 m^3 each
Size: 4 tanks 64.0m x 18.3m x 4.0m deep
Volume: 19,093 m^3 total
Type: Ames Crosta Aerators

Secondary Clarifiers
Type: 4 tanks with Dorr-Oliver Sludge collector type RSR
Size: 33.5m dia. x 3.05m swd
Size: 4 tanks 24.4m dia. with 3.05m wd
Retention: 2.4 hours
Loading: Surface - 32.85 $g^3/m^2 \cdot d$
Weir - 199.66 $m^3/m \cdot d$

Primary Digesters
Size: Two 19.8m dia. x 6.7m swd
Volume: 4078.00 m^3
Loading: 11.0 $kg/m^3 \cdot d$
Size: Two 33.5m dia. x 7.6m swd
Volume: 13,452 m^3
Loading: 1.84 $kg/m^3 \cdot d$

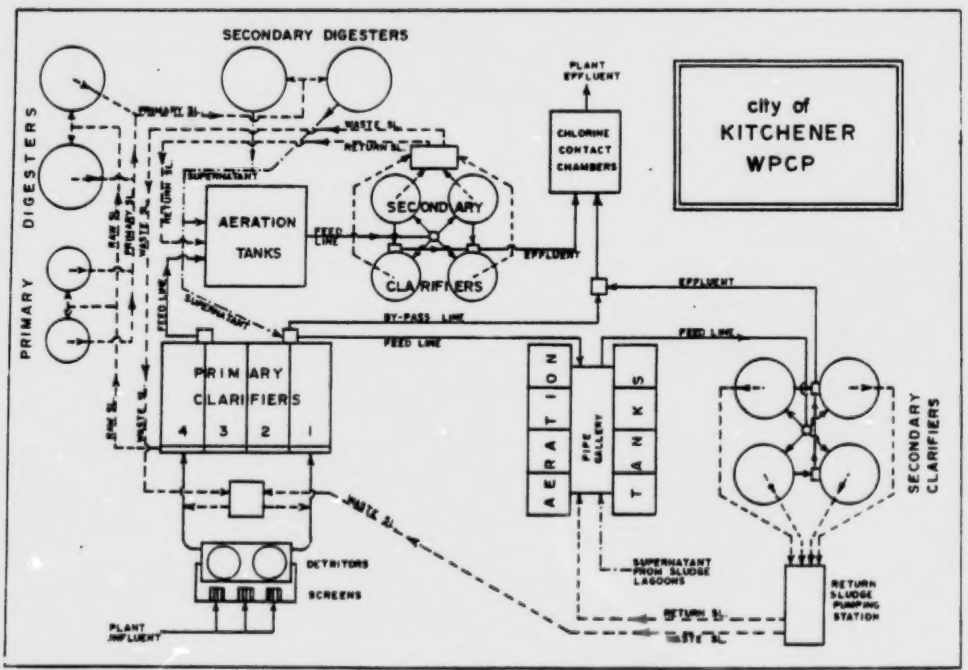
Secondary Digester
Type: Dorr, floating cover
Size: Two 19.8m dia. x 6.7m swd
Volume: 11,328 m^3
Loading: 2.96 kg/m^3/month

Vacuum Filter
Type: Konline - Sanderson
Size: 46.5 m^2 (one only)

Sludge Lagoon
Area: 6.5 ha

Sand Filter
Size: Ten 4.9m x 30.5m = 1486.4 m^2

Chlorination
Volume: One contact chamber 641.0m^3
Retention: 15 min.
Volume: One contact chamber 2050.2 m^3
Retention: 15 min.



DESIGN DATA - IMPERIAL

PROJECT: City of Kitchener WPCP

PROJECT NO.: 1-0314-72
previously 2-0019-58

TREATMENT: Conventional Secondary

DESIGN FLOW: 27 MIGD

RAW SEWAGE: BOD 275 mg/l
SS 300 mg/l

PRIMARY TREATMENT

Screening

- Three (incl. one standby) mechanically cleaned bar screens by Dorr-Oliver-Long. Set in concrete channels 5' wide x 3.5' deep @ 75° incline. Bars are 3/8" thick 2" wide with 1" clear between bars.

Grit Removal

Two detritor tanks 35' square x 30" deep. 26(U.S.) MGD.

Primary Clarifiers

- Four, 190' x 65' x 12' SWD 146,900 ft^3/tank.

SECONDARY TREATMENT

Aeration Tanks

- 8 Concrete cells 65' square with 15'-6" SWD with mixed liquor volume 62,000 ft^3ea.
- 4 tanks 210'x60'x13'-3" deep (total 4.2 million gallons).
- Ames Crosta Aerators.

Secondary Clarifiers

- 4 tanks 110' dia. with 10' SWD with Dorr-Oliver Sludge collector type RSR.
- 4 tanks 80' dia. with 10' SWD. 2.4 hrs. retention. Surface loading 672 gal/ft^2/day. Weir Loading 13,400 gal/ft^2/day.

Primary Digesters

- Two 65' dia. x 22' SWD (144,000 ft^3 or 0.9 mg.) loading 1.08 lb/Cu. Ft./day
- Two 110' dia. x 25' SWD (475,000 ft^3 or 3.0 mg) loading 0.18 lb/Cu. Ft./day.

Secondary Digester

- Two 100' dia. x 29' SWD (400,000 ft^3 or 2.5 mill. gall.) loading 0.29 lb/ft^3/wo. type: Dorr. floating cover.

Vacuum Filter

Type: Konline - Sanderson
Size: 500 sq. ft. (one only)

Sludge Lagoon

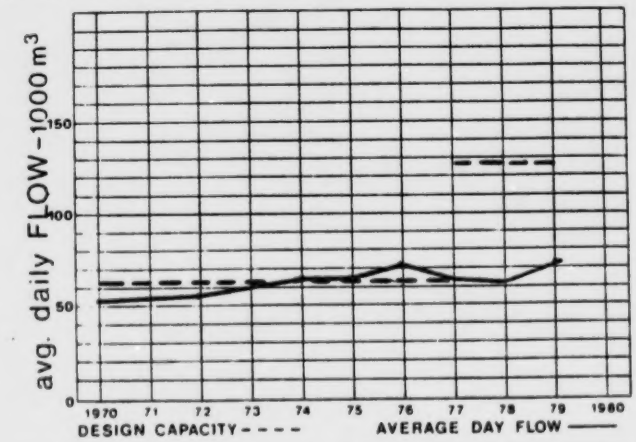
Area: 16 acres.

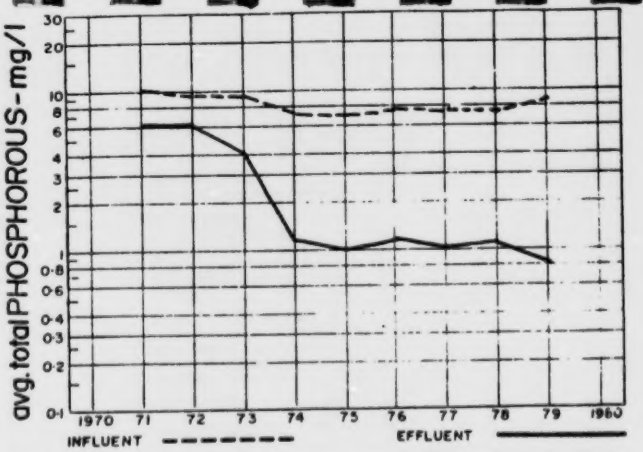
Sand Filter

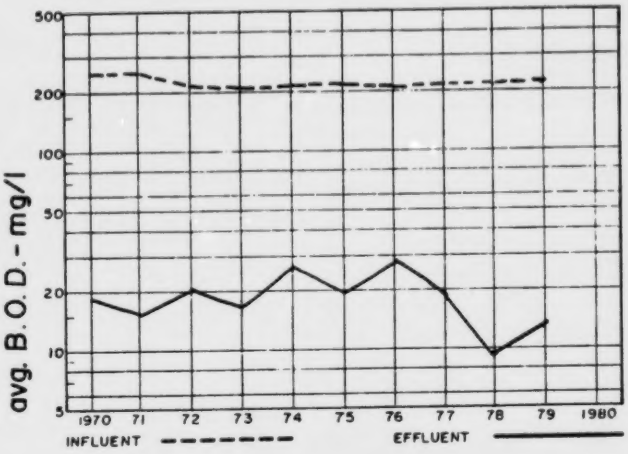
Ten - 16' x 100' = 16,000 sq. ft. with automatic backwash.

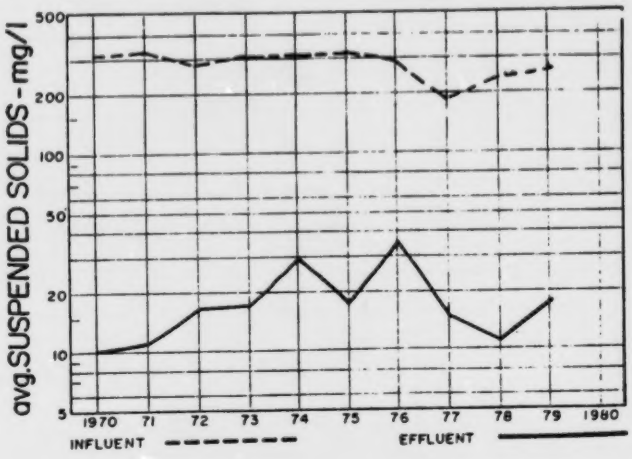
Chlorination

- One contact chamber 141,000 gallons with 15 min. retention.
- One contact chamber 451,000 gallons with 15 min. retention.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000374 KITCHENER W P C P

MUNICIPALITY : KITCHENER
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 135,288
POPULATION SERVED : 39,000
PERCENT SERVED : 28.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 122.742 1000 M3 DESIGN BODS : 275.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	1916.730	61.830	92.420	90.920	254.0	6.8	97	473.8	293.0	17.1	94	528.8	6.8	.8	88	11.500
FEB	1786.700	63.595	72.009	100.012	301.0	21.0	93	500.2	295.0	41.0	86	453.8	7.8	1.6	79	11.078
MAR	2007.000	64.700	107.100	136.500	243.0	17.8	92	451.9	254.0	17.5	93	474.6	5.3	.8	84	8.951
APR	2010.470	67.020	120.280	127.000	212.6	16.3	92	394.6	233.3	46.8	79	374.9	12.0	.8	92	22.377
MAY	2020.010	65.160	105.470	127.000	249.0	13.7	94	475.2	329.0	21.9	93	620.3	7.0	.9	86	12.261
JUN	1921.640	64.050	74.320	91.000	188.7	10.0	94	343.3	254.0	13.3	94	482.3	9.5	.8	91	16.718
JUL	1715.250	55.330	71.690	91.000	182.7	10.8	94	294.7	224.0	12.6	94	362.6	9.3	.9	89	14.322
AUG	1681.470	54.240	72.510	91.000	159.0	8.3	94	253.3	290.0	7.4	97	475.0	7.5	.9	87	10.980
SEP	1643.700	54.790	76.550	100.000	201.0	10.6	94	312.9	256.0	10.7	95	403.2	8.1	.9	88	11.725
OCT	1847.450	59.595	73.190	100.000	187.0	9.9	94	327.0	264.0	8.9	96	471.2	9.3	.5	93	16.091
NOV	1899.430	63.310	75.420	91.000	241.6	14.8	93	430.6	315.6	8.7	97	582.8	9.4	.5	94	16.880
DEC	1900.637	61.311	140.700	118.000	191.0	14.5	92	335.4	228.0	8.3	96	417.5	8.4	.5	93	14.920
TOTAL	22350.487							4593.5				5627.4				167.803
AVERAGE		61.244			217.5	12.8	94		269.6	17.8	93		8.3	.8	89	
MAXIMUM			140.700	136.500												
NO. OF SAMPLES					134	112			250	251			12	294		

DESIGN DATA - METRIC

WATERLOO

PROJECT City of Waterloo WPCP

PROJECT NO. 1-0350-73

DESIGN FLOW 45.480 $10^3 m^3/d$

DESIGN POPULATION 63,300

BOD - Raw Sewage 300 mg/l
- Removal 90%

SS - Raw Sewage 270 mg/l
- Removal 90%

PRIMARY TREATMENT

Comminution

One Worthington

Sewage Lift Station

Type: Canada Pump
Size: Two 219.5 l/s @ 9.75m TDH
One 378.5 l/s @ 9.75m TDH

Grit Removal

Type: Dorr Detritor
Size: Two 4.3m x 4.3m x .5m ($17.73 m^3$)
Retention: 0.94 min.

Primary Sedimentation

Type: Dorr
Size: Two 22.9m dia. x 4.0m swd
Volume: 3.51 $10^3 m^3$
Loading: Surface, 33.2 $m^3/m^2 \cdot d$
Weir, 189.2 $m^3/m \cdot d$
Retention: 3.09 hours
Loading: Surface, 33.2 $m^3/m^2 \cdot d$
Weir, 189.2 $m^3/m \cdot d$

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air, single-pass with turbine aerators
Size: Four 40.8m x 9.8m x 4.7m
Volume: (7.64 $10^3 m^3$)
Retention: 6.7 hours

Diffusers

(a) Spargers (66/tank)
(b) "Lightnin" Turbine (3/tank)

Air Supply

Type: Sutorbilt
Size: Two 1567. l/

Secondary Sedimentation

Size: Two, 19.8m dia. x 3.05m swd
One, 27.4m dia. x 3.05m swd
($3886.8 m^3$)
Retention: 3.4 hr.

CHLORINATION

Type: Wallace & Tiernan
Size: One, 226.8 kg/day

OUTFALL

- to Grand River

SLUDGE HANDLING

Digestion System - Two-stage

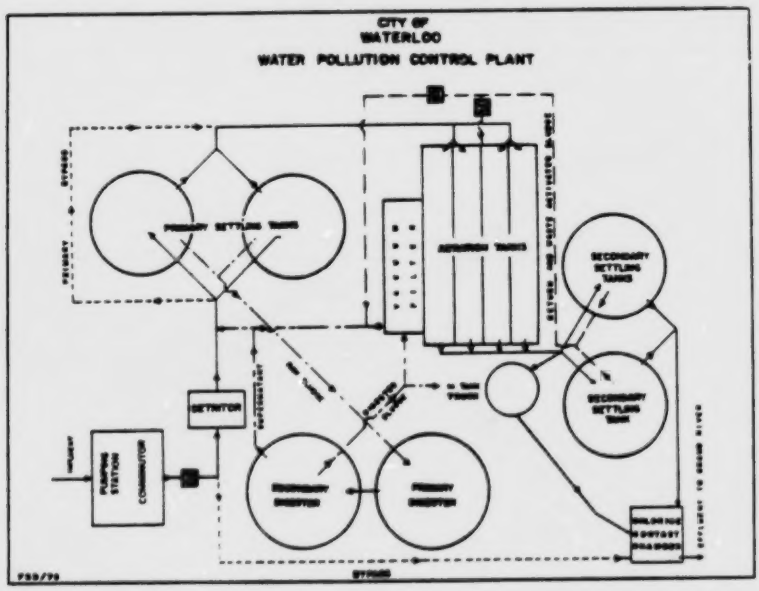
Primary - fixed cover
Type: Dorr draft tubes (3)
Size: One 24.4m x 6.8m swd
Volume: 3525.8 m^3
Loading: 56.1 $kg/m^3/mo.$

Secondary -

Size: One 24.4m dia. x 6.1m swd
Volume: 3.32 $10^3 m^3$
Total Loading: 28.36 $kg/m^3/mo.$
Liquid sludge haulage.

Vacuum Filter

Type: Komline-Sanderson
Size: One 27.87 m^2



DESIGN DATA - IMPERIAL

PROJECT NOS.	3-0022-58 3-0303-66
DESIGN FLOW	10 MIGD
DESIGN POPULATION	63,300
BOD - Raw Sewage - Removal	300 mg/l 90%
SS - Raw Sewage - Removal	270 mg/l 90%

PRIMARY TREATMENT

Comminution

One Worthington

Sewage Lift Station

Type: Canada Pump
Size: Two 2900 gpm @ 32' tdh (el)
One 5000 gpm @ 32' tdh (diesel)

Grit Removal

Type: Dorr Detritor
Size: Two 14' x 14' x 1.6' (3,900 gal)
Retention: 0.94 min

Primary Sedimentation

Type: Dorr
Size: Two 75' dia x 13' swd
Rel (0.772 mil gal)
Loading: Surface, 880 gal/ft
Weir, 12,700 gal/ft
Retention: 3.09 hours
Loading: Surface, 880 gal/ft^2/day
Weir, 12,700 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air, single-pass with turbine aerators
Size: Four 134' x 32½' x 15½'
(1.68 mil gal)
Retention: 6.7 hours

Diffusers

(a) Spargers (66/tank)
(b) "Lightnin" Turbine (3/tank)

Air Supply

Type: Sutorbilt
Size: Two 3,750 cfm

Secondary Sedimentation

Size: Two, 65' dia x 10' swd
One, 90' dia x 10' swd
(855,000 gal)
Retention: 3.4 hr

CHLORINATION

Type: Wallace & Tiernan
Size: One, 500 lb/day

OUTFALL

- to Grand River

SLUDGE HANDLING

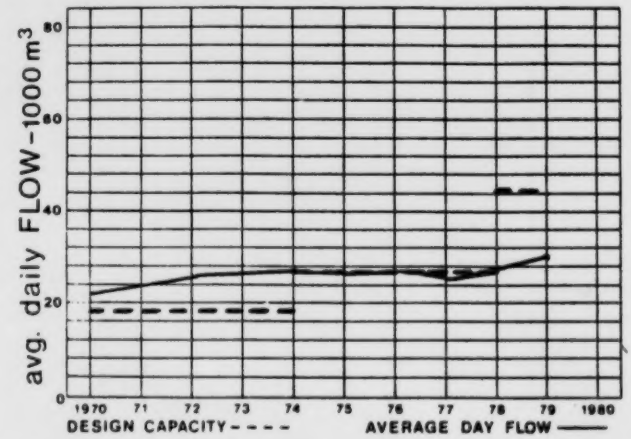
Digestion System - Two-stage

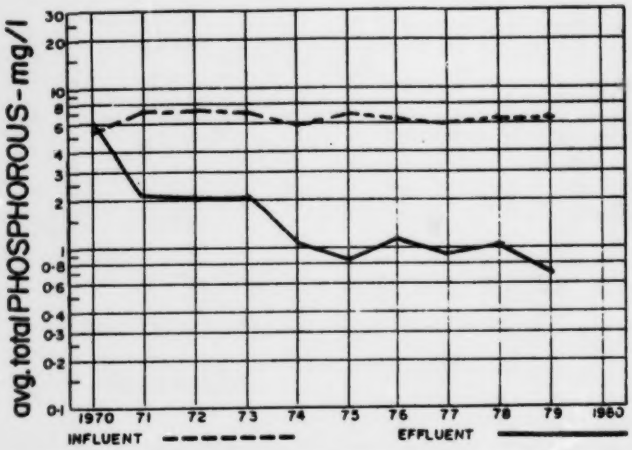
Primary - fixed cover
Type: Dorr draft tubes (3)
Size: One 80' x 21½' swd
(134,500 cu ft or 0.778 mil gal)
Loading: 3.5 lb/cu ft/mo

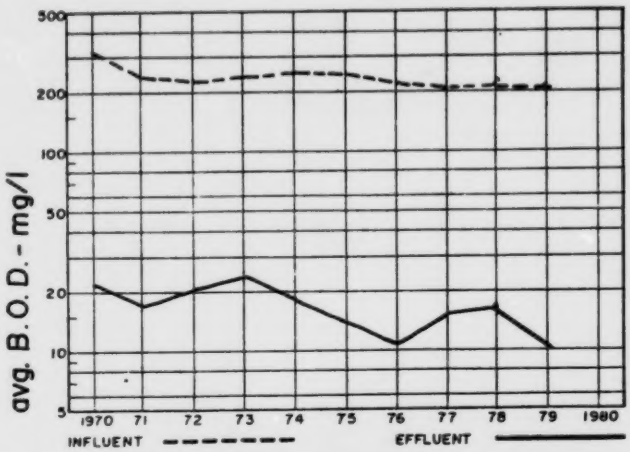
Secondary -
Size: One 80' dia x 20' swd
(117,000 cu ft or 0.73 mil gal)
Total Loading: 1.9 lb/cu ft/mo
Liquid sludge haulage.

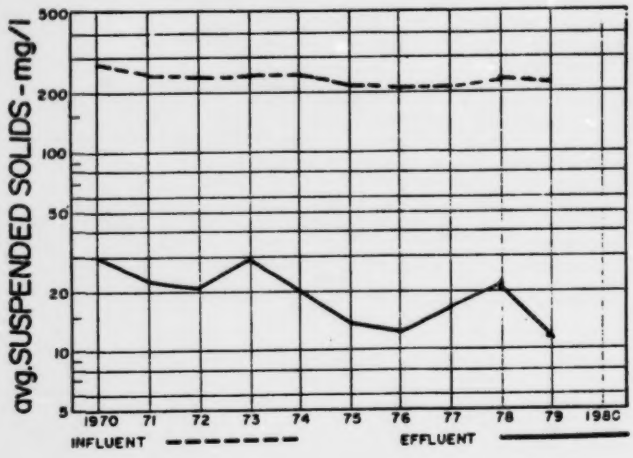
Vacuum Filter

Type: Komline-Sanderson
Size: One 300 sq ft









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000793 WATERLOO WPCP

MUNICIPALITY : WATERLOO
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 50,291
POPULATION SERVED : 63,000
PERCENT SERVED : 125.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 48.480 1000 M3 DESIGN BOD5 : 300.0 MG/L DESIGN SUSP.SOLIDS : 270.0 MG/L

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	751.417	24.239	33.304		174.0	7.0	95	125.4	197.0	18.0	90	134.5	7.4	.7	90	5.034
FEB	737.734	26.348	43.005		228.0	11.0	95	160.0	213.0	17.0	92	144.5	7.7	.6	92	5.238
MAR	1048.026	33.743	49.206		146.0	7.0	95	145.3	167.0	11.0	93	163.1	6.4	.5	92	6.172
APR	1112.200	37.070	57.100		206.0	23.0	88	203.5	196.0	19.0	90	198.8	7.2	1.0	86	6.896
MAY	984.300	31.750	38.100		245.0	15.0	93	226.3	199.0	14.0	92	182.0	5.8	.8	86	4.922
JUN	868.200	28.940	34.100		208.0	9.0	95	172.7	224.0	9.0	95	186.6	5.9	.5	91	4.688
JUL	752.400	24.270	28.500		239.0	10.0	95	172.3	228.0	11.0	95	163.2	6.7	.8	88	4.439
AUG	830.900	26.800	33.700		233.0	10.0	95	185.2	249.0	8.0	96	200.2	6.3	.6	90	4.736
SEP	916.100	30.540	38.000		202.0	7.0	96	178.6	244.0	8.0	96	216.2	7.6	.7	90	6.321
OCT	968.500	31.240	37.100		228.0	8.5	96	212.5	244.0	8.0	96	228.5	7.1	1.1	84	5.811
NOV	1099.600	36.650	52.100		180.0	6.0	96	191.3	191.0	7.0	96	202.3	6.2	.8	87	5.938
DEC	1127.700	36.380	60.900		186.0	8.0	95	178.1	180.0	7.0	96	195.0	6.6	1.1	83	6.202
TOTAL	11195.077							2151.9				2213.6				66.397
AVERAGE		30.664			204.5	10.1	95		211.0	11.4	94		6.7	.7	88	
MAXIMUM			60.900													
NO. OF SAMPLES					97	95			230	229			98	225		

DESIGN DATA - METRIC

WOOLWICH (ELMIRA)

PROJECT: Woolwich Twp. (Elmira) WPCP

PROJECT NO.: 2-0096-61

DESIGN FLOW:
- Municipal 2.273 $10^3 m^3/d$
- Industrial 0.818 $10^3 m^3/d$
- Total 3.091 $10^3 m^3/d$

DESIGN POPULATION: 5,000

BOD:
- Municipal 170 mg/l
- Industrial 1100 mg/l
- Combined 420 mg/l

SS:
- Municipal 300 mg/l
- Industrial 320 mg/l
- Combined 306 mg/l

PRETREATMENT -- INDUSTRIAL WASTES

Type --
Balancing tank plus
Neutralization facilities

PRIMARY TREATMENT

Screening

One coarse manually cleaned bar screen

Grit Removal

Type: Grit channels, manually cleaned

Primary Sedimentation

Type: Link Belt
Size: Two 12.2m dia. x 2.4m swd
Volume: 568.25 m^3
Retention: 4.42 hours
Loading: Surface, 25.08 $m^3/m^2 \cdot d$
Weir, 40.23 $m^3/m \cdot d$

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical aeration
Size: Four 9.1m x 9.1m x 4.3m
Volume: 1363.8m^3
Retention: 10.6 hours

Aerators

Type: Four Ames-Crosta

Secondary Sedimentation

Type: Rex Chainbelt
Size: Two 13.7m dia. x 2.1m swd
Volume: 631.89m^3
Retention: 4.9 hours
Loading: Surface, 10.462 $m^3/m^2 \cdot d$
Weir, 35.76 $m^3/m \cdot d$

CHLORINATION

Type: F & P

Chlorine Contact Chamber

Size: Two 9.1m x 1.8m x 1.4m
Volume: 48.188 m^3
Retention: 22.5 min.

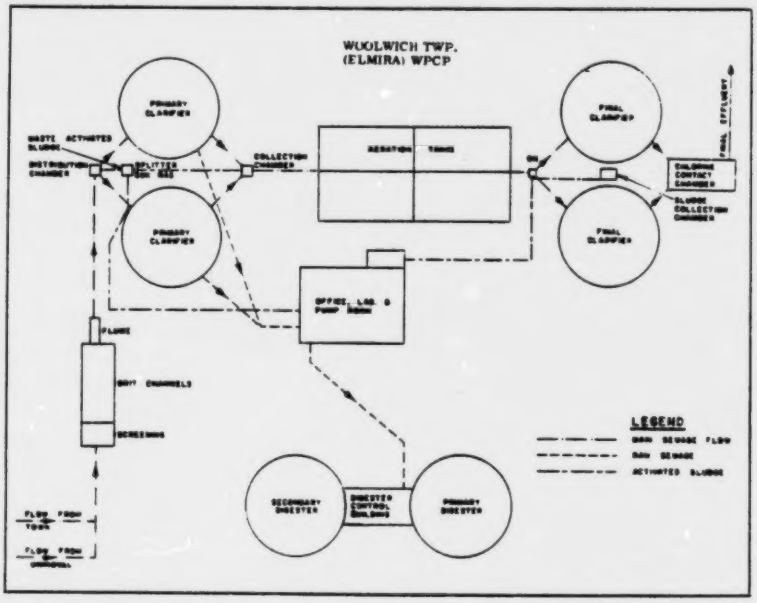
OUTFALL

- to Canangagique Creek

SLUDGE HANDLING

Digestion System

Type: Two-stage digestion
Primary - One 9.1m tank with two Dorr mixers (441.42 m^3)
Secondary - One 9.1m dia. tank (430.51 m^3)



DESIGN DATA - IMPERIAL

PROJECT NO. 2-0096-61

DESIGN FLOW
- Municipal 0.50 mgd
- Industrial 0.18 mgd
- Total 0.68 mgd

DESIGN POPULATION 5,000

BOD -
- Municipal 170 mg/l
- Industrial 1100 mg/l
- Combined 420 mg/l

SS -
- Municipal 300 mg/l
- Industrial 320 mg/l
- Combined 306 mg/l

PRETREATMENT -- INDUSTRIAL WASTES

Type --
Balancing tank plus
neutralization facilities

PRIMARY TREATMENT

Screening

One coarse manually cleaned bar screen

Grit Removal

Type: Grit channels, manually cleaned

Primary Sedimentation

Type: Link Belt
Size: Two 40' dia x 8' swd (125,000 gal)
Retention: 4.42 hours
Loading: Surface, 270 gal/ft^2/day
Weir, 2,700 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical aeration
Size: Four 30' x 30' x 14.2' (48,00 cu ft or 300,000 gal)
Retention: 10.6 hours

Aerators

Type: Four Ames-Crosta

Secondary Sedimentation

Type: Rex Chainbelt
Size: Two 45' dia x 7' swd (22,300 cu ft or 139,000 gal)
Retention: 4.9 hours
Loading: Surface, 214 gal/ft^2/day
Weir, 2,400 gal/ft/day

CHLORINATION

Type: F & P

Chlorine Contact Chamber

Size: Two 30' x 6' x 4.74' (1,700 cu ft or 10,000 gal)
Retention: 22.5 min

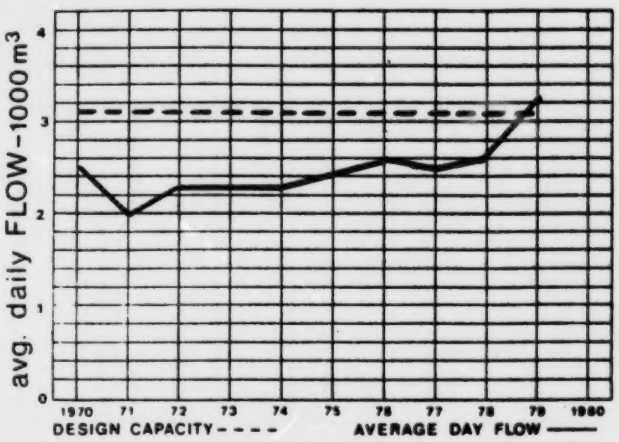
OUTFALL

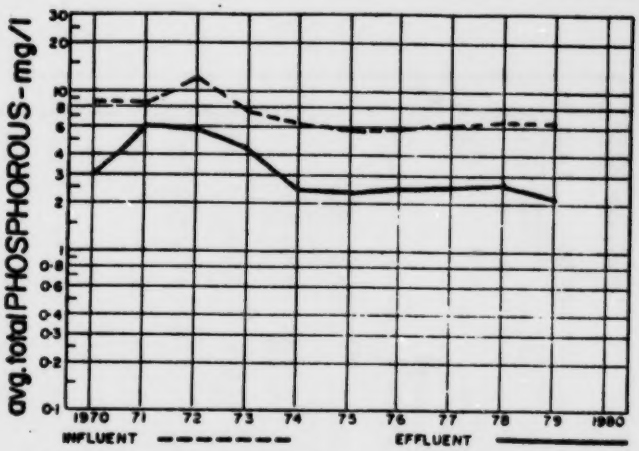
- to Canangagique Creek

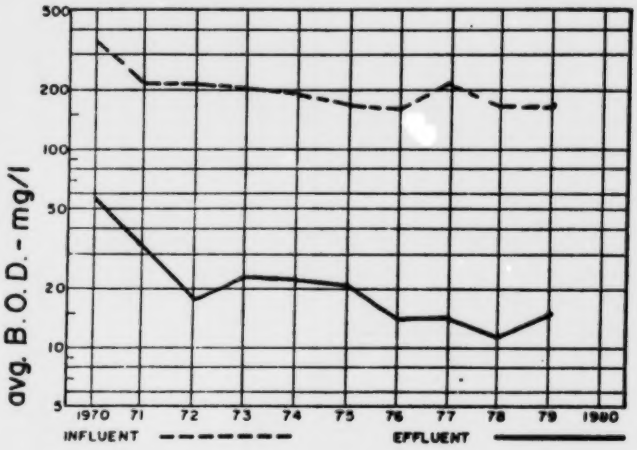
SLUDGE HANDLING

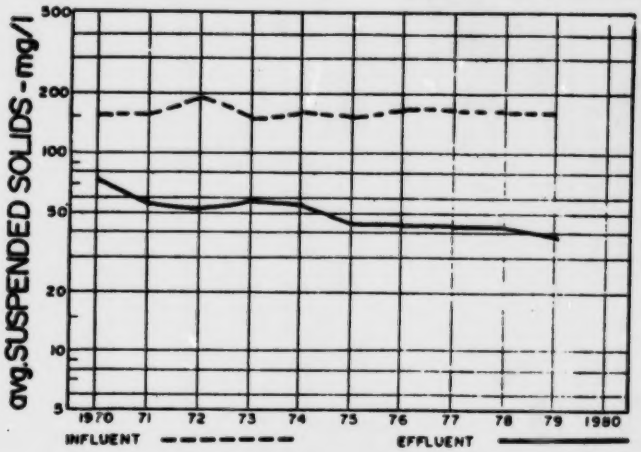
Digestion System

Type: Two-stage digestion
Primary - One 30' dia tank with two Dorr mixers (97,100 gal)
Secondary - One 30' dia tank (15,200 cu ft or 94,700 gal)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000150 ELMIRA WPCP

MUNICIPALITY : WOOLWICH (TOWN & IND)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

* COMMENT: THIS SYSTEM TREATS INDUSTRIAL AND DOMESTIC WASTES. THE PLANT IS ABLE TO TREAT EACH WASTE STREAM SEPARATELY, (SEE FOLLOWING REPORTS) THE DESIGN VALUES SHOWN BELOW ARE THE COMBINED VALUES.

CURRENT POPULATION : 16,392
POPULATION SERVED : 6,795
PERCENT SERVED : 41.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : * 3.001 1000 M3 DESIGN BOD : 400.0 MG/L DESIGN SUSP.SOLIDS : * 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK HT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	63.312	2.042	4.410		183.0	15.7	90	9.3	150.0	39.2	78	7.2	5.9	1.7	71	.268
FEB	55.279	1.974	8.273		257.0	26.7	89	12.7	169.0	31.8	80	7.3	6.8	1.9	71	.260
MAR	180.649	5.827	14.047		102.0	14.6	85	15.7	120.0	30.7	74	16.1	3.7	1.3	64	.434
APR	178.195	5.939	10.796		87.0	6.3	92	14.3	81.9	32.6	60	8.7	4.3	.9	78	.590
MAY	91.869	2.963	6.189		131.0	14.0	89	10.7	153.0	38.0	75	10.5	5.1	2.1	58	.278
JUN	72.061	2.402	4.325		190.0	12.0	93	12.8	149.0	53.0	64	6.9	6.7	1.8	73	.353
JUL	55.199	1.780	4.760		157.0	7.6	95	8.2	189.0	57.0	65	5.9	10.0	2.9	71	.392
AUG	51.642	1.665	3.074		172.0	13.0	92	8.2	166.0	47.0	71	6.1	8.5	1.3	84	.372
SEP	64.552	2.151	4.085		280.0	48.0	81	13.6	183.0	59.0	67	8.0	7.0	2.5	64	.290
OCT	93.268	3.008	6.780		136.0	10.0	92	11.7	232.0	27.0	88	19.1	8.0	2.9	63	.478
NOV	138.857	4.628	10.004		125.0	12.3	90	15.8	141.0	32.0	77	15.1	4.8	2.4	47	.305
DEC	153.735	4.959	11.321		150.0	20.0	86	19.9	128.0	33.0	74	14.8	5.1	3.5	31	.248
TOTAL	1198.618							153.3				126.0				4.260
AVERAGE		3.278			180.8	16.6	89		152.8	39.6	74		6.2	2.1	66	
MAXIMUM			14.047													
NO. OF SAMPLES					39	40			133	148			38	40		

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT — REPORT DATE: 4 AUG 81

WORKS NUMBER : 110003932 WOOLWICH (ELMIRA TOWN)

MUNICIPALITY : WOOLWICH (ELMIRA TOWN)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 16,392
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.091 1000 M3 DESIGN BOD5 : 1100.0 MG/L DESIGN SUSP.SOLIDS : 320.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	49.015	1.581	4.000	9.001	122.0				149.0				6.5			
FEB	40.973	1.463	5.637	9.638	166.0				211.0				8.6			
MAR	152.305	4.913	9.137	10.001	49.0				113.0				4.4			
APR	160.333	5.344	10.300	10.800	63.3				94.4				4.8			
MAY	81.513	2.717	5.606	9.555	123.0				138.0				8.0			
JUN	62.178	2.072	4.097	7.053	176.0				97.0				7.9			
JUL	49.616	1.600	4.705	10.465	119.0				153.0				9.9			
AUG	47.499	1.532	2.937	10.465	137.0				135.0				7.4			
SEP	53.085	1.769	3.766	10.465	373.0				235.0				7.1			
OCT	81.983	2.644	6.383	9.965	118.0				164.0				9.1			
NOV	122.762	4.092	9.595	10.010	83.0				119.0				4.7			
DEC	134.953	4.353	10.876	10.238	90.0				132.0				5.0			
TOTAL	1036.215			117.656												
AVERAGE		2.840			134.9				145.0				6.9			
MAXIMUM			10.876	10.800												
NO. OF SAMPLES					39				133				39			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT — REPORT DATE: 4 AUG 81

WORKS NUMBER : 110003923 WOOLWICH (ELMIRA IND.)

MUNICIPALITY : WOOLWICH (ELMIRA IND.)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 16.392
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.091 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	14.297	.461	.664		377.0				123.0				.7			
FEB	14.311	.511	.759		550.0				122.0				.8			
MAR	28.344	.914	.755		446.0				129.0				.6			
APR	17.862	.600	.793		330.0				133.0				1.9			
MAY	10.356	.334	.548		320.0				90.0				.9			
JUN	9.883	.329	.378		278.0				213.0				1.8			
JUL	5.583	.180	.788		208.0				152.0				2.8			
AUG	4.143	.159	.319		255.0				145.0				3.4			
SEP	11.467	.382	.430		541.0				160.0				4.3			
OCT	11.285	.364	.438		307.0				102.0				4.3			
NOV	16.095	.536	.527		296.0				158.0				5.4			
DEC	18.782	.605	.782		390.0				168.0				4.1			
TOTAL	162.408															
AVERAGE		.448			358.1				141.2				2.5			
MAXIMUM			.793													
NO. OF SAMPLES					38				131				38			

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

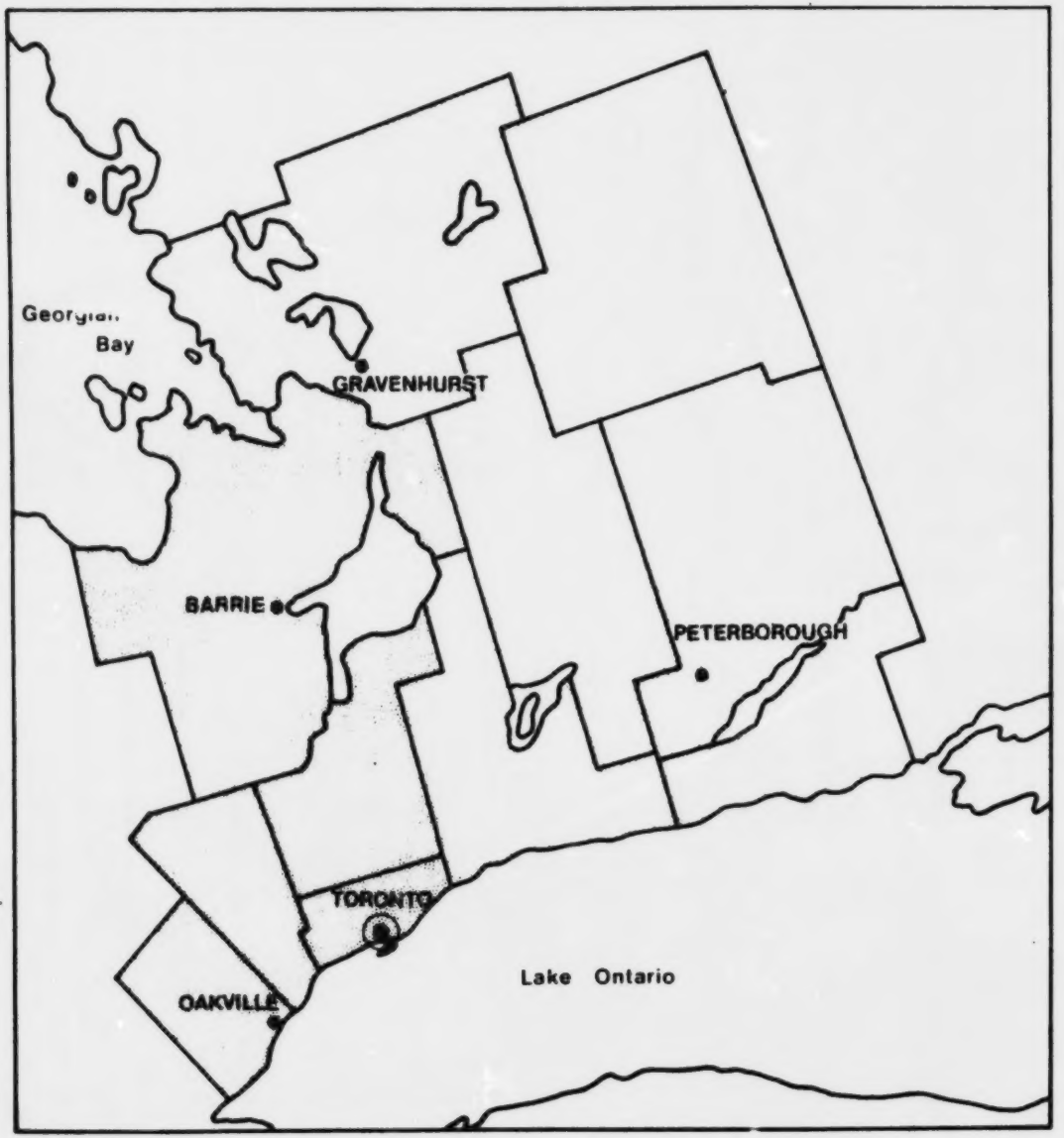
Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386



Central Region ③

Ministry of the Environment
Ontario

DESIGN DATA - METRIC

PROJECT: Town of Campbellford WPCP

PROJECT NO.: 1-0028-66

DESIGN FLOW: 5.91 $10^3 m^3/d$

BOD - Raw Sewage: 200 mg/l

SS - Raw Sewage: 200 mg/l

TREATMENT: Conventional Secondary

DESIGN POPULATION: 4200

PRIMARY TREATMENT

Grit Removal

Type: Channels, manually cleaned
Size: Two 11.13m x 0.81m x 1.14m
Flow Velocity: 13048 m/s

Screening

Type: Manually cleaned

Comminution

Type: Worthington model 15C-5

Primary Sedimentation

Type: Dorr-Oliver-Long S-7
Size: Two 12.19m dia. x 2.13m swd
Retention: 2.4 hours
Loading: Surface 19.55 $m^3/m^2 \cdot d$
Weir 59.60 $m^3/m \cdot d$

Outfall

- to the Trent River

CAMPBELLFORD

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical
Size: Three, each 250.03 m^3
Retention: 4 hours
Air Supply: Simon Carves, one aerator per tank

Secondary Sedimentation

Type: Dorr-Oliver-Long S-7
Size: Two 13.7 m dia. x 2.7 m swd
Retention: 4.8 hours
Loading: Surface 16.133 $m^3/m^2 \cdot d$
Weir 52.746 $m^3/m \cdot d$

CHLORINATION

Type: Wallace & Tiernan V800
Size: One 400

Chlorine Contact Chamber

Retention: 30 minutes

DIGESTION SYSTEM

Type: Single stage
Size: 9.14 m dia. x 7.62 m swd

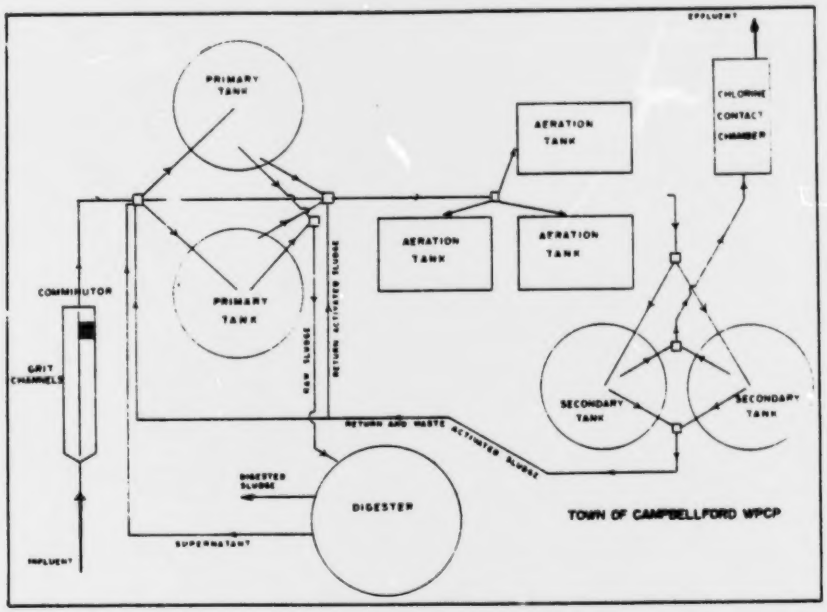
PUMPING STATION

P.S. #1

Three Crane Deming each 50.5 l/s @ 11.58m TDH

P.S. #2

Two Flygt CP3100 each 25.24 l/s @ 7.32m TDH



DESIGN DATA - IMPERIAL

PROJECT Town of Campbellford WPCP

PROJECT NO. 1-0028-66

TREATMENT Conventional Secondary

DESIGN FLOW 1.3 MIGD

BOD - Raw Sewage - 200 mg/l

SS - Raw Sewage - 200 mg/l

DESIGN POPULATION 4200

PRIMARY TREATMENT

Grit Removal

Type: Channels, manually cleaned
Size: Two 36'6"x2'8"x3'9"
Flow Velocity: 1 fps

Screening - Type: Manually cleaned

Comminution

Type: Worthington model 15C-5

Primary Sedimentation

Type: Dorr-Oliver-Long S-7
Size: Two 40'dia x 7' swd
Retention: 2.4 hours
Loading: Surface 400 gal/ft^2/day
Weir 4000 gal/ft/day

Outfall - to the Trent River

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical
Size: Three, each 55,000 gallons
Retention: 4 hours
Air Supply: Simon Carves, one aerator per tank

Secondary Sedimentation

Type: Dorr-Oliver-Long S-7
Size: Two 45' dia x 9' swd
Retention: 4.8 hours
Loading: Surface 330 gal/ft^2/day
Weir 3540 gal/ft/day

CHLORINATION

Type: Wallace & Tierman V800
Size: One 400

Chlorine Contact Chamber

Retention: 30 minutes

DIGESTION SYSTEM

Type: Single stage
Size: 30' dia x 25' swd

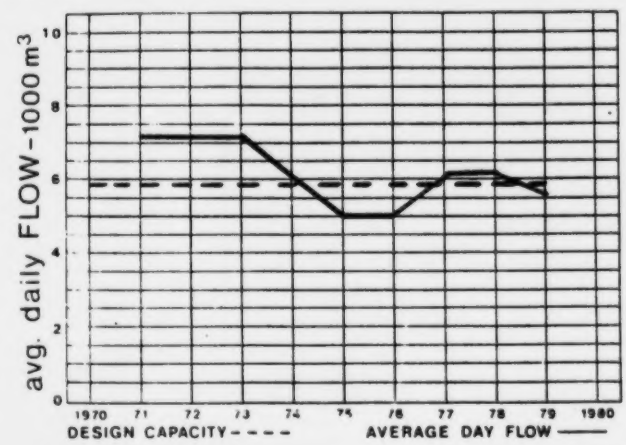
PUMPING STATION

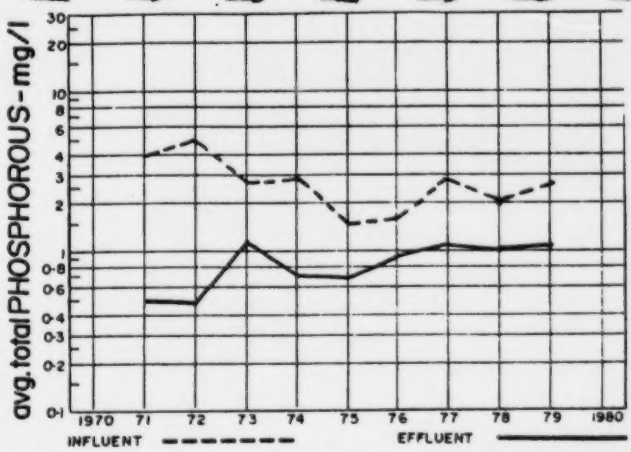
P.S. #1

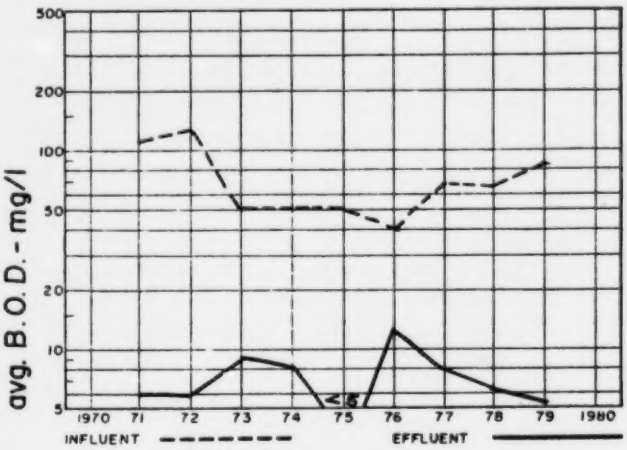
Three Crane Deming each 800 US gpm @ 38' tdh

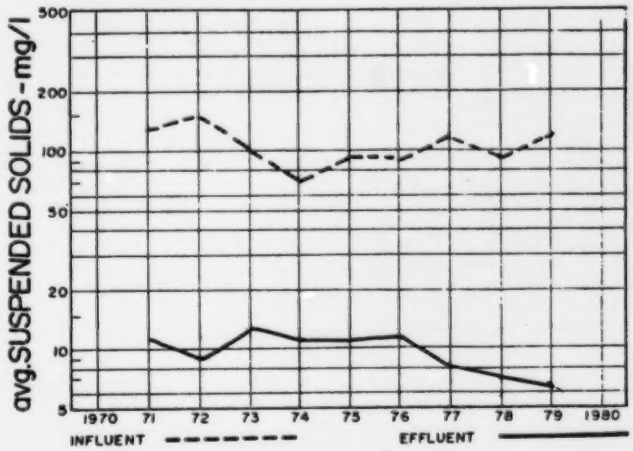
P.S. #2

Two Flygt CP3100 each 400 US gpm @ 24' tdh









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000962 CAMPBELLFORD WPCP

MUNICIPALITY : CAMPBELLFORD
REGION : 03 CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 3,411
POPULATION SERVED : 3,267
PERCENT SERVED : 95.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.909 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	160.746	5.187	8.837	11.365	75.0	*			102.0	7.0	93	15.2	1.6	*		
FEB	129.561	4.628	5.819	10.910	110.0	11.0	90	12.8	122.0	5.0	95	15.1	3.2	1.3	59	.245
MAR	244.393	7.883	9.092	12.274	*	9.0			95.0	8.0	91	21.2	1.5	.6	60	.220
APR	233.800	7.793	8.700	11.500	30.0	*			288.0	6.0	97	65.9	1.3	*		
MAY	199.000	6.429	7.500	9.100	70.0	*			94.0	5.0	94	17.7	2.9	*		
JUN	184.600	5.310	6.400	9.700	*	*			120.0	7.0	94	18.6	*	*		
JUL	167.200	5.394	6.500	8.000	140.0	2.0	98	23.0	52.0	6.0	88	7.6	*	.9		
AUG	158.700	5.119	6.300	9.000	*	*			99.0	6.0	93	14.7	*	*		
SEP	139.600	4.653	6.000	11.000	100.0	2.0	98	13.6	126.0	5.0	96	16.8	3.6	1.4	61	.307
OCT	154.700	4.990	5.900	8.600	70.0	1.4	98	10.6	70.0	5.0	92	10.0	2.6	1.3	50	.201
NOV	150.400	5.013	7.600	11.800	84.0	4.0	93	9.0	92.0	7.0	92	12.7	2.8	1.2	57	.241
DEC	184.500	5.952	10.900	14.300	70.0	7.0	90	11.8	86.0	7.0	91	14.5	4.4	1.3	70	.572
TOTAL	2087.200							80.8				230.6				1.787
AVERAGE		5.696			81.0	5.2	93		112.1	6.1	94		2.6	1.1	56	
MAXIMUM			10.900	14.300												
NO. OF SAMPLES					9	7			51	49			9	7		

DESIGN DATA - METRIC

MISSISSAUGA (LAKEVIEW)

SOUTH PEEL - LAKEVIEW WPCP

TYPE: CONVENTIONAL SECONDARY

DESIGN FLOW 227.3 10^3m^3/d
DESIGN BOD 300 mg/l
DESIGN S.S. 350 mg/l

PRETREATMENT
- Grit Removal
  Aerated tanks
  Two 32.3m x 6.4m x 4.1m
  Total vol. 1702.5m^3
  Air supply 1.8-2.5 l/s per 0.305m of tank
- Screening
  Mechanical front cleaned screens
  Two with 19.05c.m openings in 2.13m Channels

PRIMARY SEDIMENTATION

Two 26.5m x 9.8m x 3.7m
Two 26.5m x 14.6 x 3.7m
Two 65.2m x 19.8m x 3.7m
Total vol: 14.18 10^3m^3
Detention Time: 2 hr.
Overflow rate 44.0 m^3/m^2 - d

SECONDARY TREATMENT
- Aeration Tanks
  Diffused air; SPARGERS
  Two 3-pass tanks, 43.8m x 19.2m x 4.4m
  Two 3-pass tanks, 43.8m x 18.3m x 4.6m
  Two 4-pass tanks, 65.8m x 24.4m x 4.3m
  Total volume: 42.19 10^3m^3
  Detention time: 6.1 hr.
  Air supply: Three BROWN-BOVERI each 12,537 l/s
- Secondary Sedimentation
  Four 26.5m x 9.8m x 3.7m
  Two 31.7m x 14.6m x 3.7m
  Four 42.7m x 24.1m x 3.7m
  Total volume: 22.41 10^3m^3
  Detention time: 30 hrs.
  Overflow rate: 28.1$1m^3/m^2$.d

CHLORINATION

One F & P 907.2 kg/d
Three W & T 907.2 kg/d
Supply: rail tank cars

SLUDGE HANDLING
- Primary Digesters
  Fixed roof, mixed by gas recirculation
  T 19.8m dia. x 8.5m swd
  Total volume 4.68 10^3m^3
- Secondary Digesters
  Fixed concrete roof
  Four 30.5m dia x 8.5 swd
  Volume: 42.78 10^3m^3
- Holding Digesters
  Fixed concrete roof
  Two 24.4m dia. x 7.9m swd
  Total volume: 8.32 10^3m^3

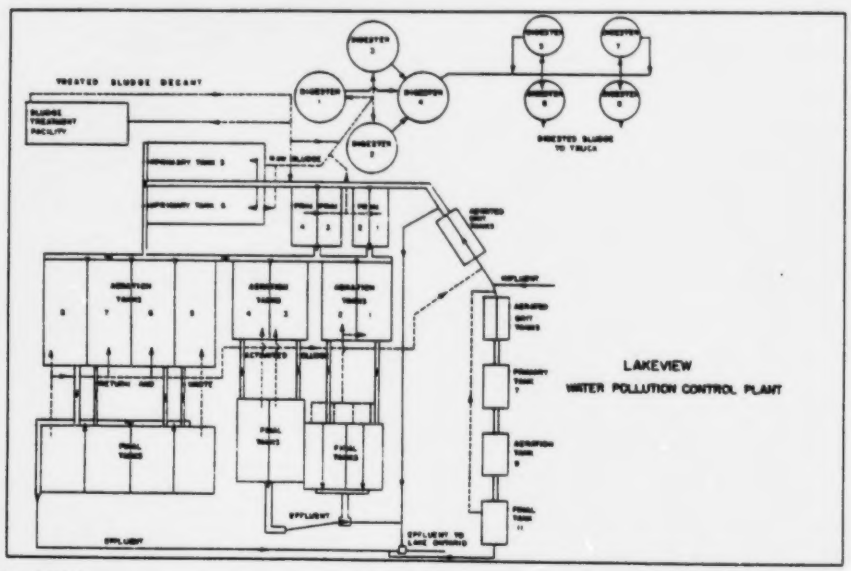
PLANT III
TYPE: CONVENTIONAL ACTIVATED SLUDGE

DESIGN FLOW 56.8 10^3m^3/d
DESIGN BOD 300 mg/l
DESIGN S.S. 350 mg/l

PRETREATMENT
- Grit Removal
  Aerated Tanks
  Two 27.4m x 6.4m x 4.0m
  Detention: 8.6A min.
  Air Supply: 1.67 - 2.51 l/s
- Screening
  Mechanical front cleaned screens
  Two with 19.05mm openings in 2.13m channel.

PRIMARY SEDIMENTATION
One 65.2m x 19.8m x 3.7m
Total Volume: 4.73 l/s
Detention time: 2 hr.
Overflow rate: 44.0 m^3/m^2.d

SECONDARY TREATMENT
- Aeration Tanks
  Diffused air: SPARJERS
  One 4-pass tank, 131.7m x 6.1m x 4.6m
  Total Volume: 14.68 10^3m^3
  Detention time: 7.67 hr.
  Air supply: Two Brown-Boveri each 14626.5 l/s
- Secondary Sedimentation
  One 3.7m x 24.0m x 79.2m
  Total volume: 7.09 10^3m^3
  Detention time: 3 hr.
  Overflow rate: 28.8 m^3/m^3.d



DESIGN DATA - IMPERIAL

SOUTH PEEL - LAKEVIEW WPCP

TYPE: CONVENTIONAL SECONDARY

DESIGN FLOW 50.0 MIGD
DESIGN BOD 300 mg/l
DESIGN S.S. 350 mg/l

PRETREATMENT
- Grit Removal
  Aerated tanks
  Two 106' x 21' x 13.5'
  Total vol. 375,000 gal.
  Air supply 4.2 - 6 cfm
- Screening
  Mechanical front cleaned screens
  Two with 3/4" openings in 7' channels

PRIMARY SEDIMENTATION

Two 87' x 32' x 12'
Two 87' x 48' x 12'
Two 214' x 65' x 12'
Total vol: 3.12 MG
Detention Time: 2 hr.
Overflow rate 900 gpd/ft^2

SECONDARY TREATMENT
- Aeration Tanks
  Diffused air; SPARGERS
  Two 3-pass tanks, 144' x 63' x 14.3'
  Two 3-pass tanks, 144' x 60' x 15'
  Two 4-pass tanks, 216' x 48' x 14'
  Total volume: 9.24 MG
  Detention time: 5.9 hr.
  Air supply: Three BROWN-BOVERI each 30,000 cfm
- Secondary Sedimentation
  Four 87' x 32' x 12'
  Two 104' x 48' x 12'
  Four 140' x 79' x 12'
  Total volume: 4.93 MG
  Detention time: 3.2 hr.
  Overflow rate: 575 gpd/ft^2

CHLORINATION

One F & P 2000 lb/day cap.
Three W & T 2000 lb/day cap.
Supply: rail tank cars.

SLUDGE HANDLING
- Primary Digesters
  Fixed roof, mixed by gas recirculation
  Three 100' dia. x 30.5' swd
  Total volume 7.88000 ft^3 or 4.9 MG
- Secondary Digesters
  Fixed concrete roof
  One 100' dia x 30.5 swd
  Volume: 282,000 ft^3 or 1.64 MG
- Holding Digesters
  Fixed concrete roof
  Two 80' dia x 25.5' swd
  Total volume: 358,000 ft^3 or 1.60 MG

(NOTE: Two tanks 65' dia x 25' swd not in use)

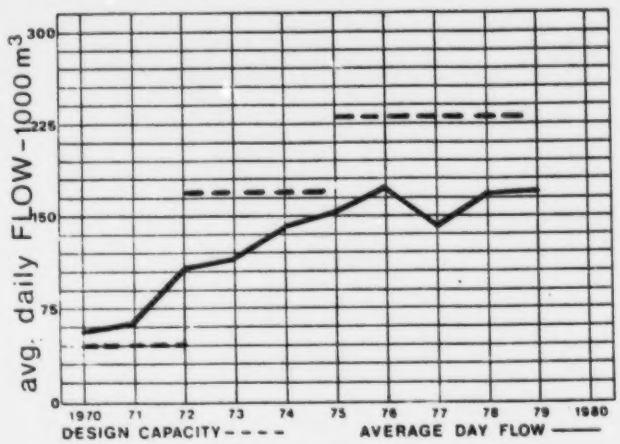
PLANT III
TYPE: CONVENTIONAL ACTIVATED SLUDGE

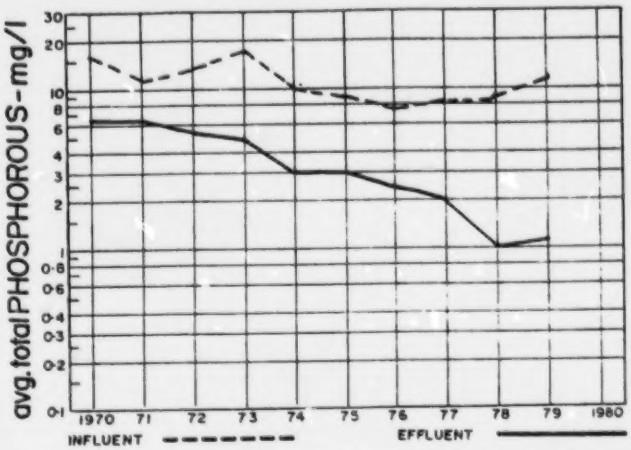
DESIGN FLOW 12.5 MIGD
DESIGN BOD 300 mg/l
DESIGN S.S 350 mg/l

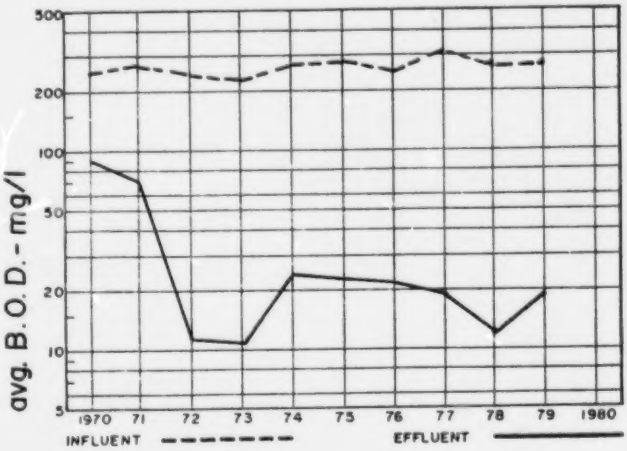
PRETREATMENT
- Grit Removal
  Aerated Tanks
  Two 90' x 21' x 13.0'
  Detention 8.68 min.
  Air Supply 4 - 6 cfm.
- Screening
  Mechanical front cleaned screens
  Two with 3/4" openings in 7' channels.

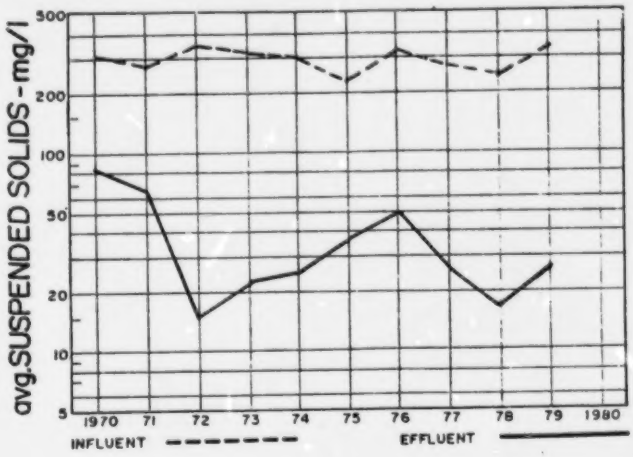
PRIMARY SEDIMENTATION
One 214' x 65' x 12'
Total Volume: 1.04 MG
Detention time: 2 hr.
Overflow rate: 900 gpd/ft^2

SECONDARY TREATMENT
- Aeration Tanks
  Diffused air; SPARJERS
  One 4-pass tank, 432' x 20' x 15'
  Total Volume: 3.23 MG
  Detention time: 4.67 hr.
  Air supply: Two Brown-Boveri each 33,000 cfm.
- Secondary Sedimentation
  One 12.16' x 78.75' x 260'
  Total volume: 1.56 MG
  Detention time: 3 hr.
  Overflow rate: 610 gpd/ft^2









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001284 LAKEVIEW WPCP SOUTH-PEEL SYSTEN

MUNICIPALITY : SOUTH PEEL (LAKEVIEW)
REGION : 03 CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 420.000
POPULATION SERVED : 420,000
PERCENT SERVED : 100%

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 227.300 1000 M3 DESIGN BOD5 : 300.0 MG/L DESIGN SUSP.SOLIDS : 350.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				AUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	5297.908	170.930	273.208	371.408	372.0	6.0	98	1939.0	304.0	13.0	95	1541.6	7.0	.9	86	32.052
FEB	4455.080	159.110	210.480	303.673	353.0	23.0	93	1470.1	341.0	25.0	92	1407.8	12.2	.6	95	51.679
MAR	5953.442	192.023	227.755	409.140	234.0	48.0	79	1107.3	247.0	105.0	57	845.3	8.0	1.2	85	40.483
APR	6248.022	208.207	300.490	381.864	245.0	34.0	86	1318.3	232.0	42.0	81	1187.1	7.1	1.7	76	33.733
MAY	5693.865	183.658	228.209	298.672	230.0	29.0	87	1144.4	214.0	39.0	81	996.4	6.5	1.1	82	30.462
JUN	4872.857	162.292	180.476	283.670	192.0	10.0	94	886.8	290.0	13.0	95	1349.7	9.6	1.0	88	41.517
JUL	4707.838	151.836	175.476	305.491	264.0	19.0	92	1153.4	364.0	5.0	98	1690.1	11.2	1.3	88	46.513
AUG	4919.227	158.655	230.028	306.855	298.0	13.0	95	1401.9	393.0	17.0	95	1849.6	18.1	1.3	92	82.249
SEP	4625.100	154.670	226.845	281.397	279.0	7.0	97	1258.0	403.0	21.0	94	1766.7	10.4	2.0	80	38.481
OCT	4927.409	159.110	186.386	276.396	371.0	21.0	94	1724.5	391.0	22.0	94	1818.2	12.0	.9	91	54.349
NOV	5006.964	166.838	213.207	299.127	370.0	18.0	95	1762.4	348.0	16.0	95	1662.3	12.0	1.7	85	51.572
DEC	5351.551	172.748	286.398	363.680	277.0	11.0	96	1423.5	350.0	20.0	94	1766.0	8.3	1.5	81	38.391
TOTAL	62059.263							16590.1				17881.2				539.487
AVERAGE		170.006			290.4	19.9	93		323.0	28.1	91		10.2	1.3	87	
MAXIMUM			300.490	409.140												
NO. OF SAMPLES					94	89			94	90			67	67		

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Southeastern Region

4

Ministry of the Environment
Ontario

DESIGN DATA - METRIC

BELLEVILLE

PROJECT NO. 1-0004-66
PROJECT City of Belleville WPCP
TREATMENT Conventional Secondary

DESIGN FLOW 36.4 $10^3 m^3/d$
DESIGN POPULATION 52,000

BOD - Raw Sewage 130 mg/l
- Removal 88%

SS - Raw Sewage 175 mg/l
- Removal 91%

PUMPING STATIONS

a) Plant site @ 10.7m TDH

One Worthington 189.3 l/s (electric)
One Worthington 126.1 l/s (electric)
One Worthington 189.3 l/s (electric and diesel)

b) Front Street

One Worthington 189.3 l/s (electric @16.8m TDH)
One Worthington 126.1 l/s (electric @16.8m TDH)
One Worthington 252.2 l/s (diesel & electric @ 16.8m TDH)
One Fairbanks Morse 333.0 l/s (diesel @12.8m TDH)

c) Dunda: Street West

One Worthington 31.5 l/s (electric @8.8m TDH)
One Worthington 98.4 l/s (diesel @ 12.2m TDH)

PRIMARY TREATMENT

Grit Removal

Type: Aerated grit tank with grab bucket
Size: Two 7.3m x 7.3m x 3.8m
Volume: 238.2m^3
Retention: 9.4 minutes
Air Supply: Two Roots blowers 255 l/s each
Two Aerzener Rotary 254.9 l/s each

Screening

Type: Mechanically cleaned
Size: .05m Opening

Comminution

Type: Two Chicago Pump barminutor Model C-36

Primary Sedimentation

Type: Falk
Size: Four 21.3m x 11.0m x 3.3m (3418.6m^3)
Retention: 2.3 hours
Loading Surface: 39.3$m^3/m^2 \cdot d$
Weir: 219.0$m^2/m \cdot d$

SLUDGE HANDLING

Digestion System

Type: Two stage

SECONDARY TREATMENT

Aeration Tanks

Type: Three, 3-pass
Size: each pass 18.3m x 6.1m x 3.7m swd
Volume: 3677.7m^3

Retention: 2.4 hours

Air Supply

Type: Aerzen Maschinen fabric
Size: Three 952.8 l/s @ 48.3 kPa

Diffusers

Type: Sparjers - 8 mm
Spacing: 10 cm centers

Secondary Sedimentation

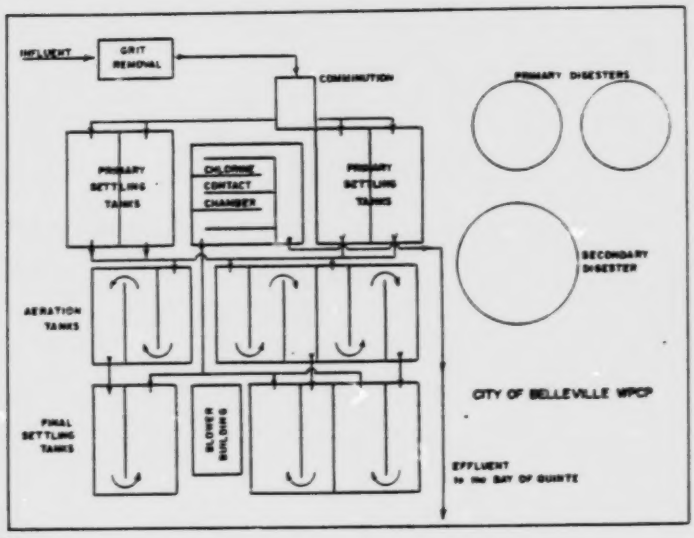
Type: Falk
Size: Three 25.3m x 17.2m x 3.7m (2 pass)
Volume: 4864.2m^3
Retention: 3 hours
Loading: Surface 39.1$m^3/m^2 \cdot d$
Weir: 193.7$m^2/m \cdot d$

CHLORINATION

Type: Fischer & Porter
Size: One 453.6 kg/d
One: 680.4 kg/d

Chlorine Contact Chamber

Size: 16.7m x 18.3m x 3.4m
Volume: 759.2m^3



DESIGN DATA - IMPERIAL

PROJECT NO. 1-0004-86
PROJECT City of Belleville WPCP
TREATMENT Conventional Secondary

DESIGN FLOW 8.0 mgd

DESIGN POPULATION 82,000

BOD - Raw Sewage 130 mg/l
- Removal 88%

SS - Raw Sewage 175 mg/l
- Removal 91%

PUMPING STATIONS

a) Plant site @ 35' tdh

One Worthington 2500 gpm (electric)
One Worthington 1666 gpm (electric)
One Worthington 2500 gpm (electric and diesel)

b) Front Street

One Worthington 2500 gpm (electric @ 55' tdh)
One Worthington 1666 gpm (electric @ 55' tdh)
One Worthington 3332 gpm (diesel and electric @ 55' tdh)
One Fairbanks Morse 4400 gpm (diesel @ 42' tdh)

c) Dundas Street West

One Worthington 416 gpm (electric @ 29' tdh)
One Worthington 1300 gpm (diesel @ 40' tdh)

PRIMARY TREATMENT

Grit Removal

Type: Aerated grit tank with grab bucket
Size: Two 24' x 24' x 12½' (52,400 gal)
Retention: 9.4 minutes
Air Supply: Two Roots blowers 610 scfm each
Two Aerzener Rotary 350 scfm each

Screening

Type: Mechanically cleaned
Size: 2" opening

Comminution

Type: Two Chicago Pump barminutor Model C-36

Primary Sedimentation

Type: Falk
Size: Four 70' x 36' x 12' (752,000 gal total)
Retention: 2.3 hours
Loading: Surface; 786 gal/ft^2/day
Weir; 14,700 gal/ft/day

SLUDGE HANDLING

Digestion System

Type: Two stage

Primary:
Type: Gas mixed
Size: Two 45' dia. x 27' swd (79,400 ft^3 total)

Secondary:
Type: Non mixed
Size: One 55' dia. x 27' swd (59,400 ft^3 total)

SECONDARY TREATMENT

Aeration Tanks

Type: Three, 3-pass each pass 60' x 20' x 12' swd (Volume 809,000 gal total)

Retention: 2.4 hours

Air Supply

Type: Aerzen Maschinen fabric
Size: Three 2230 scfm @ 7 psi

Diffusers

Type: Sparjers - 5/16"
Spacing: 4 inch centers

Secondary Sedimentation

Type: Falk
Size: Three 83' x 56.5' x 12' (2 pass) (1,070,000 gal total)
Retention: 3 hours
Loading: Surface 900 gal/ft^2/day
Weir 13,000 gal/ft/day

CHLORINATION

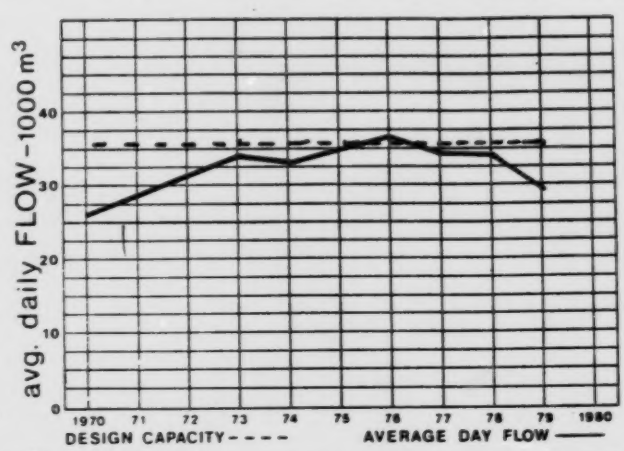
Type: Fischer & Porter
Size: One 1,000 lb/day
One 1,500 lb/day

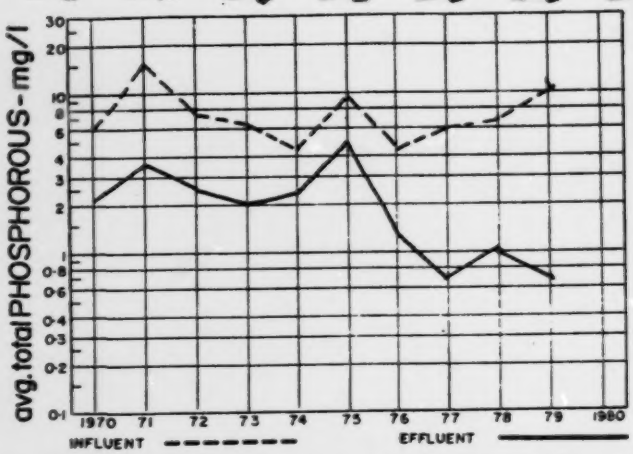
Chlorine Contact Chamber

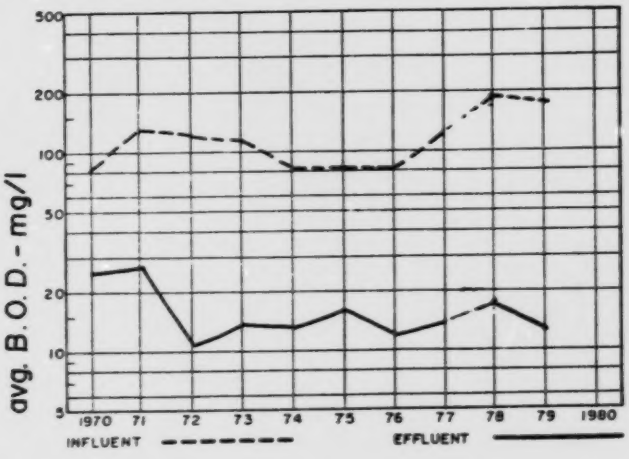
Size: 54.7' x 60' x 11' (167,000 gal)
Retention: 30 minutes

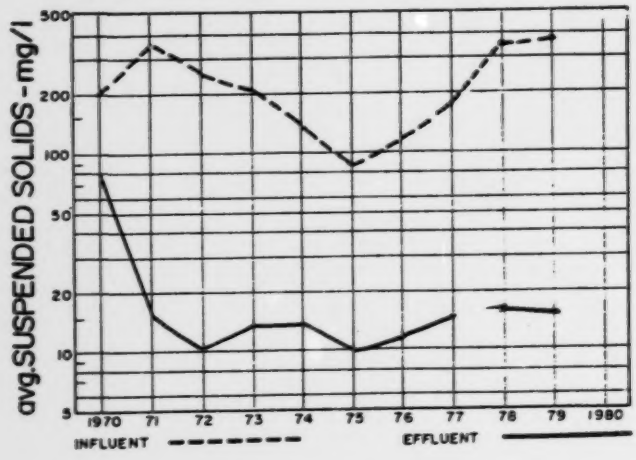
Outfall

Approx. 240' of 48" dia. concrete pipe and 1179' of 36" dia. concrete pipe to Bay of Quinte









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000018 BELLEVILLE WPCP

MUNICIPALITY : BELLEVILLE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 34,822
POPULATION SERVED : 35,550
PERCENT SERVED : 102.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 38.368 1000 M3 DESIGN BOD5 : 130.0 MG/L DESIGN SUSP.SOLIDS : 175.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	971.844	31.350	52.643	72.736	180.0	19.8	89	155.6	250.0	21.6	91	221.9	9.4	1.4	85	7.775
FEB	888.695	31.025	48.188	65.917	100.0	5.2	94	84.2	270.0	23.2	91	219.3	9.9	1.0	89	7.909
MAR	1429.899	46.126	83.010	93.193	136.0	21.0	84	164.4	73.0	21.0	71	74.3	8.4	.9	89	10.724
APR	1300.850	43.380	78.480	84.000	178.0	13.7	92	211.1	486.0	16.7	96	610.4	9.6	.7	92	11.578
MAY	871 500	28.100	37.500	40.900	174.0	7.6	95	145.0	383.0	10.3	97	324.8	8.9	.6	93	7.233
JUN	671.862	22.395	37.900	34.095	187.0	11.8	93	117.7	473.0	13.9	97	308.4	12.5	1.0	92	7.728
JUL	579.761	18.700	36.368	30.004	173.0	18.0	89	89.8	433.0	16.0	96	241.7	10.8	1.2	88	5.450
AUG	626.390	20.200	38.641	31.640	291.0	16.0	94	173.3	523.0	10.0	98	321.3	12.6	.5	96	7.579
SEP	686.446	22.880			242.0	14.0	94	158.5	524.0	12.0	97	351.4	14.8	.6	95	9.748
OCT	704.630	22.730			198.0	15.0	92	128.9	868.0	12.5	98	481.8	17.8	.5	97	12.190
NOV	977.390	32.580	70.480	70.480	146.0	15.0	89	128.0	348.0	20.0	94	320.5	8.0	.6	92	7.233
DEC	1080.357	34.850	59.100	55.690	134.0	10.0	92	133.9	277.0	9.0	96	289.5	7.2	.4	94	7.348
TOTAL	10789.624							1687.8				3745.9				102.491
AVERAGE		29.525			178.0	13.9	92		392.3	15.5	96		10.8	.7	92	
MAXIMUM			83.010	93.193												
NO. OF SAMPLES					190	193			305	213			203	212		

KINGSTON

DESIGN DATA - METRIC

PROJECT: Kingston Twp WPCP

PROJECT NO: 2002R4-70

TREATMENT: Conventional Secondary

DESIGN FLOW: 11.138 $10^3m^3/d$

BOD - Raw Sewage - 238 mg/l
- Removal - 92.

PRIMARY TREATMENT

COMMINUTOR
Type: Two, C-18 barminutors
Capacity: (each) 15 $10^3m^3/d$

SEWAGE LIFT PUMPING
Type: Two, Weinman 6-UH
Size: (each) 75.7 l/s @ 10.7m TDH

Type: One, Arthur-Leitch 8 SEA
Size: 73.4 l/s @ 9.8m TDH

AERATED GRIT TANK
Type: rectangular
Size: 4.6m x 4.3m x 3.0m swd
Volume: 59.5 m^3
Retention: 7.8 min

PRIMARY TANKS
Type: Two, rectangular
Size: 3.7m x 14m x 2.3m swd
Volume: (total) 236.5 m^3
Surface Settling Rate: 10.9 m^3/m-d @ 3.7 $10^3m^3/d$
Retention: 1.55 hr at 3.7 $10^3m^3/d$
Type: Two, rectangular
Size: 6.1m x 18.3m x 3.4m swd
Volume: (total) 762.7 m^3
Retention: 2.5 hr @ 7.36 $10^3m^3/d$
Surface Setting Rate 10.06 m^3/m-d @ 7.36 $10^3m^3/d$

RAW SLUDGE PUMPS
Type: Two, plunger type
Size: (each) 15.4 l/s

Type: One, Chicago Pumps SF-44
Size: 6.3 m^3 @ 30.5m TDH

SECONDARY TREATMENT

AERATION TANKS
Type: Two, rectangular
Size: (each) 6.9m x 18.8m x 4.6m swd
Volume: (total) 118.2 m^3
Retention: 7.7 hr @ 0.368 $10^3m^3/d$
Aerators: Chicago Pump discfusers

Type: Two square
Size: (each) 12.5m x 12.5m x 4.6m
Volume: (total) 1416.5 m^3
Retention: 4.6 hr @ 7.4 $10^3m^3/d$
Aerators: 1 mechanical 29.8 kW per tank

RETURN SLUDGE PUMPS
Type: Two, Crane 1.8m x 1.8m SPL horizontal
Size: each 42.8 l/s @ 9.1m TDH

Type: Two, Weinman UH-8 horizontal
Size: (each) 22.1 l/s @ 7.6m TDH

FINAL SETTLING TANKS
Type: Two, rectangular
Size: (each) 3.7m x 17.1m x 3.0m swd
Volume: (total) 371.4 m^3
Retention: 2.4 hr @ 3.7 $10^3m^3/d$
Surface Settling Rate:
- 29.3 m^3/m^2-d @ 3.7 $10^3m^3/d$

Type: Two, rectangular
Size: (each) 6.1m x 20.6m x 3.7m swd
Volume: (total) 918.3 m^3
Retention: 3.0 hr at 7.36 $10^3m^3/d$
Surface Settling Rate:
29.3 m^3/m^2-d @ 7.36 $10^3m^3/d$

SLUDGE DIGESTION

Type: Two-stage anaerobic

PRIMARY DIGESTER
Type: One, circular
Size: 16.8m x 6.1m swd
Volume: 1543.4 m^3

SECONDARY DIGESTER
Type: One, circular
Size: 16.8m x 6.1m swd
Volume: 1543.4 m^3

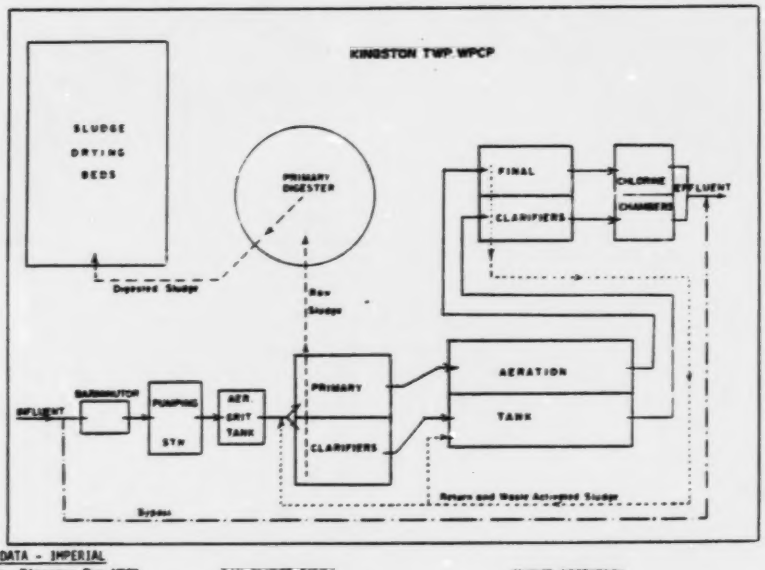
SLUDGE DRYING BEDS rectangular
Type: four, concrete-walled
Size: (each) 6.1m x 24.4m
Area: (total) 181.2 m^2

CHLORINATION

CHLORINE CONTACT TANKS
Type: One, rectangular
Size: 2.7m x 8.4m x 2m swd
Volume: 308.7 m^3
Retention: 20 min @ 3.7 $10^3m^3/d$

Type: One, rectangular
Size: 4.1m x 12.5m x 3.0m swd
Volume: 1572.9 m^3
Retention: 31 min @ 7.36 $10^3m^3/d$

CHLORINATOR
Type: Wallace and Tiernan A-731
Capacity: (max) 181.5 kg/d



DESIGN DATA - IMPERIAL

PROJECT: Kingston Twp WPCP

PROJECT NO: 2-0284-70

TREATMENT: Conventional Secondary

DESIGN FLOW: 2.45 MIGD

BOD Raw Sewage - 238 mg/l
- Removal - 92%

PRIMARY TREATMENT

COMMINUTOR
Type: Two, C-18 barminutors
Capacity: (each) 3.3 MIGD

SEWAGE LIFT PUMPING
Type: Two, Weinman 6-UH
Size: (each) 1000 IGPM @ 35' TDH

Type: One, Arthur-Leitch 8 SEA
Size: 970 IGPM @ 32' TDH

AERATED GRIT TANK
Type: rectangular
Size: 15' x 14' x 10' swd
Volume: 13,100 I.G.
Retention: 7.8 min

PRIMARY TANKS
Type: Two, rectangular
Size: 12' x 46' x 7.6' swd
Volume: (total) 52100 I.G.
Surface Settling Rate: 730 GPD/ft (@ 0.41 MIGD
Retention: 1.55 hr at 0.41 MIGD
Type: Two, rectangular
Size: 20' x 60' x 11.25' swd
Volume: (total) 164,000 I.G.
Retention: 2.5 hr @ 1.62 MIGD
Surface Setting Rate: 475 IGPD/ft
- 1.62 MIGD

RAW SLUDGE PUMPS
Type: Two, plunger type
Size: (each) 200 IGPM

Type: One, Chicago Pumps SF-44
Size: 100 usgpm @ 100' TDH

SECONDARY TREATMENT

AERATION TANKS
Type: Two, rectangular
Size: (each) 22.5' x 61.6' x 15' swd
Volume: (total) 26,000 I.G.
Retention: 7.7 hr @ 0.81 MIGD
Aerators: Chicago Pump discfusers

Type: Two, square
Size: (each) 41' x 41' x 15'
Volume: (total) 312,000 I.G.
Retention: 4.6 hr @ 1.62 MIGD
Aerators: 1 mechanical 40 HP per tank

RETURN SLUDGE PUMPS
Type: Two, Crane 6 x 6 SPL horizontal
Size: each 565 igpm @ 30' TDH

Type: Two, Weinman UH-8 horizontal
Size: (each) 350 usgpm @ 25' TDH

FINAL SETTLING TANKS
Type: Two, rectangular
Size: (each) 12' x 56' x 9.75' swd
Volume: (total) 81,700 I.G.
Retention: 2.4 hr @ 0.81 MIGD
Surface Setting Rate:
- 600 IGPD/ft @ 0.81 MIGD

Type: Two, rectangular
Size: (each) 20' x 67.5' x 12' swd
Volume: (total) 703,000 I.G.
Retention: 3.0 hr at 1.62 MIGD
Surface Setting Rate:
- 600 IGPD/ft ^{2} @ 1.62 MIGD

SLUDGE DIGESTION

Type: Two-stage anaerobic

PRIMARY DIGESTER
Type: One, circular
Size: 55' dia x 20' swd
Volume: 54,900 ft^3

SECONDARY DIGESTER
Type: One, circular
Size: 55' dia x 20' swd
Volume: 54,900 ft^3

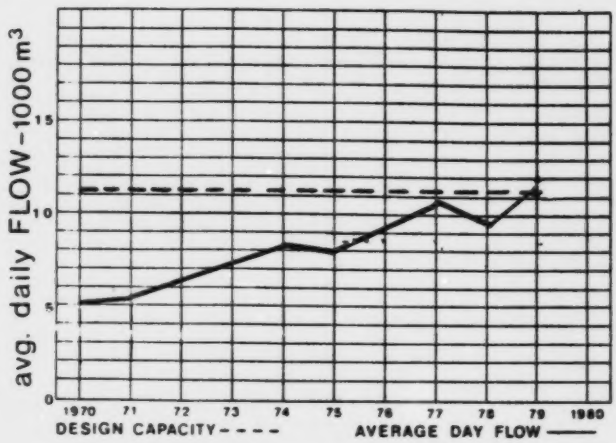
SLUDGE DRYING BEDS rectangular
Type: four, concrete-walled
Size: (each) 20' x 80'
Area: (total) 6400 ft^2

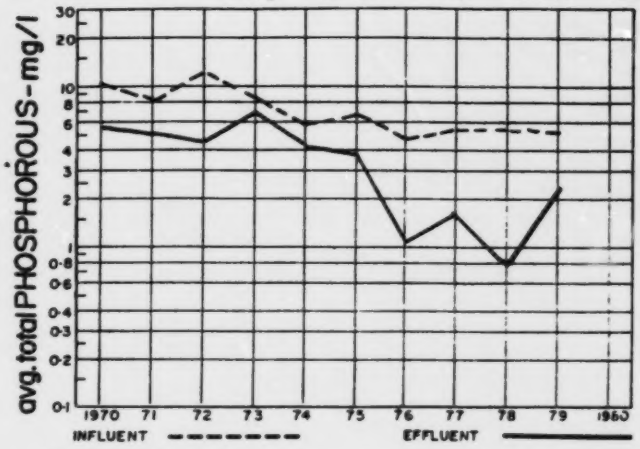
CHLORINATION

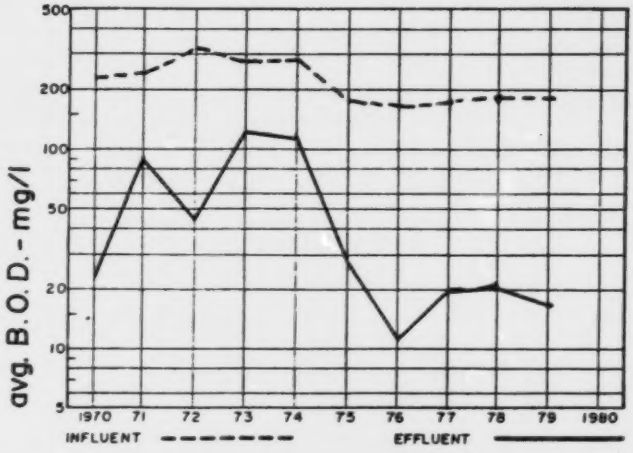
CHLORINE CONTACT TANKS
Type: One, rectangular
Size: 9' x 27.7' x 7' swd
Volume: 18,900 I.G.
Retention: 20 min @ 0.81 MIGD

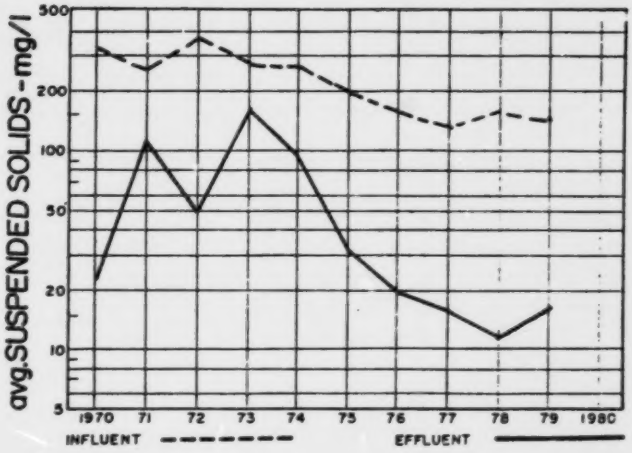
Type: One, rectangular
Size: 13.5' x 41' x 10' swd
Volume: 34,600 I.G.
Retention: 31 min @ 1.62 MIGD

CHLORINATOR
Type: Wallace and Tiernan A-731
Capacity: (max) 400 lb/day









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000365 KINGSTON TWP WPCP

MUNICIPALITY : KINGSTON TWP
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 25,830
POPULATION SERVED : 5,000
PERCENT SERVED : 19.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 11.137 1000 M3 DESIGN BOD5 : 238.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	345.096	11.132	18.561	23.867	220.0	8.6	96	72.9	157.0	12.3	92	49.9	6.7	1.0	85	1.967
FEB	296.877	10.602	19.889	28.185	193.0	14.0	92	53.1	174.0	11.4	93	48.2	6.2	.8	90	1.663
MAR	503.483	16.241	23.816	26.594	143.0	26.7	81	58.5	111.0	19.7	82	45.9	4.3	1.2	72	1.561
APR	501.678	16.723	27.225	29.320	131.0	23.4	82	53.9	115.0	18.3	84	48.5	5.0	1.1	78	1.957
MAY	374.578	12.083	20.202	26.360	208.0	7.3	96	75.1	187.0	9.2	95	66.6	6.9	1.8	76	1.985
JUN	269.980	9.000	11.790	19.550	175.0	7.0	96	45.3	181.0	13.0	92	45.3	5.0	3.3	34	.459
JUL	251.530	8.110	9.440	15.910	143.0	8.4	94	33.8	185.0	11.9	93	43.5	7.1	2.4	66	1.182
AUG	277.400	8.950	11.700	18.860	156.0	14.4	90	39.2	144.0	16.6	88	35.3	3.0	1.8	38	.316
SEP	345.800	11.520	22.440	27.270	150.0	29.6	80	41.6	125.0	18.0	87	37.6	4.2	1.5	64	.934
OCT	401.800	12.960	16.960	22.720	153.0	18.5	87	54.0	115.0	25.8	77	35.8	5.2	3.0	42	.884
NOV	404.060	13.460			190.8	20.2	89	68.9	139.6	19.0	86	48.7	4.5	3.9	13	.242
DEC	296.120	9.550			235.0	27.2	88	61.5	141.0	10.4	92	38.6	5.7	5.8	-	-
TOTAL	4268.402							658.4				544.4				13.150
AVERAGE		11.694			174.8	17.1	90		147.8	15.3	89		5.3	2.2	57	
MAXIMUM			27.225	29.320												
NO. OF SAMPLES					55	97			63	117			55	101		

DESIGN DATA - METRIC

SIDNEY (BATAWA)

PROJECT Sidney Twp. WPCP

PROJECT NO. 2-0121-82

TREATMENT Conventional Secondary

DESIGN FLOW 0.56 $10^3 m^3/d$

DESIGN POPULATION 1,500

BOD - Raw Sewage 220 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 90%

PRIMARY TREATMENT

Grit Removal

Type: Channels, manually cleaned
Size: Two 2.8m x 2.7m x 1.8m
Flow Velocity: 0.18 m/s
Retention: 18.6 sec

Comminution

- One Chicago Pump, Model 10A

Screening

One 3.8 cm c-c on comminutor bypass
One 3.8 cm c-c on plant bypass

Primary Sedimentation

Size: One 4.9m x 4.9m x 3.4m swd
(41.5 m^3)
Retention: 1.83 hr
Loading: Surface, 22.9 $m^3/m^2.d$
Weir: 55.5 $m^3/m.d$

SECONDARY TREATMENT

Type: Diffused air; three-pass
Size: One 9.1m x 6.1m x 3.0m swd
(170.0 m^3)
Retention: 7.5 hr

Diffusers: Ceramic Tubes

Spacing: 9 per pass (2 passes)
12 per pass (1 pass)

Volume: 68.2 m^3
Retention: 3.0 hr
Loading: Surface, 24.4 $m^3/m^2.d$
Weir, 74.5 $m^3/m.d$

CHLORINATION

Type: Advance
Size: 22.7 kg / day

Chlorine Contact Chamber

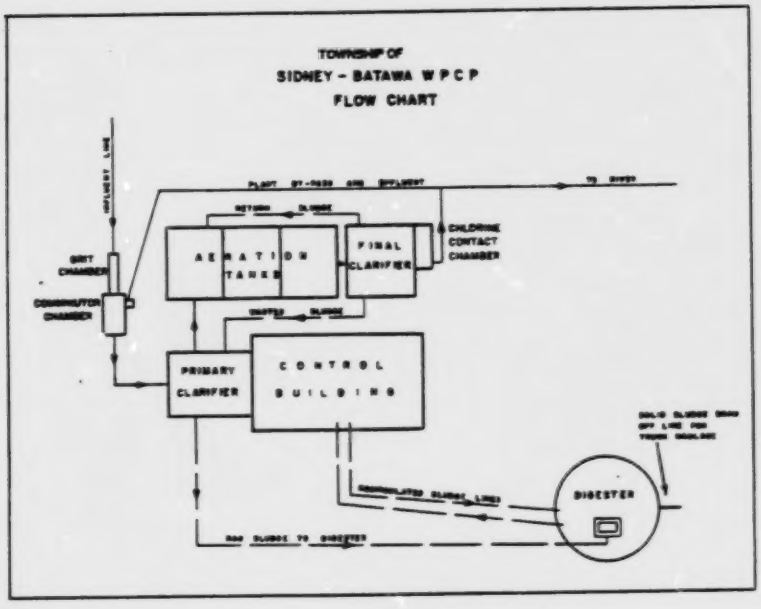
Size: One, 3.0m x 1.2m x 2.4m swd.
Retention: 24 min.

OUTFALL

- to Trent River

SLUDGE HANDLING

Type: Fixed cover, integral heat exchanger coils
Size: One 6.1m x 5.3m
(170.5 m^3)
Loading: 1.41 Kg/m^3-mo.



DESIGN DATA - IMPERIAL

PROJECT Sidney Twp. WPCP

PROJECT NO. 2-0121-82

TREATMENT Activated Sludge

DESIGN FLOW 0.12 mgd

DESIGN POPULATION 1,500

BOD - Raw Sewage 220 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 90%

PRIMARY TREATMENT

Grit Removal

Type: Channels, manually cleaned
Size: Two 9' 3" x 9" x 6" swd
Flow Velocity: 0.6 fps
Retention: 18.6 sec

Comminution

- One Chicago Pump, Model 10A

Screening

One 1½" c-c on comminutor bypass
One 1½" c-c on plant bypass

Primary Sedimentation

Size: One 16' x 16' x 11' swd
(2,130 gal)
Retention: 1.83 hr
Loading: Surface, 468 gal/ft^2/day
Weir, 3750 gal/ft/day

SECONDARY TREATMENT

Type: Diffused air; three-pass
Size: One 30' x 20' x 10' swd
(37,400 gal)
Retention: 7.5 hr

Diffusers: Ceramic Tubes

Spacing: 9 per pass (2 passes)
12 per pass (1 pass)

(15,000 gal)
Retention: 3.0 hr
Loading: Surface, 500 gal/ft^2/day
Weir, 5000 gal/ft/day

CHLORINATION

Type: Advance
Size: 50 lb/day

Chlorine Contact Chamber

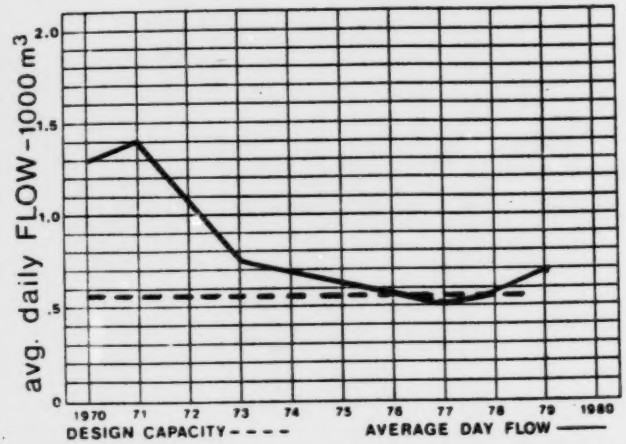
Size: One 10' x 4' x 6' (2,000 gal)
Retention: 24 min

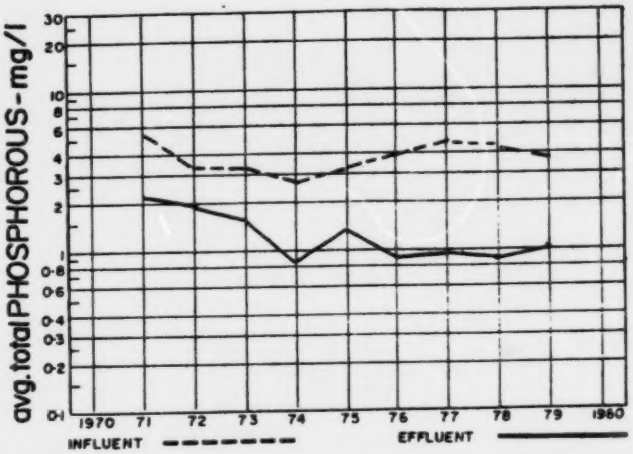
OUTFALL

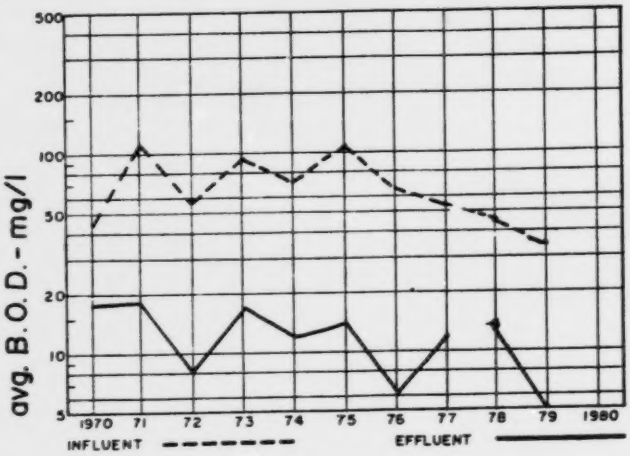
- to Trent River

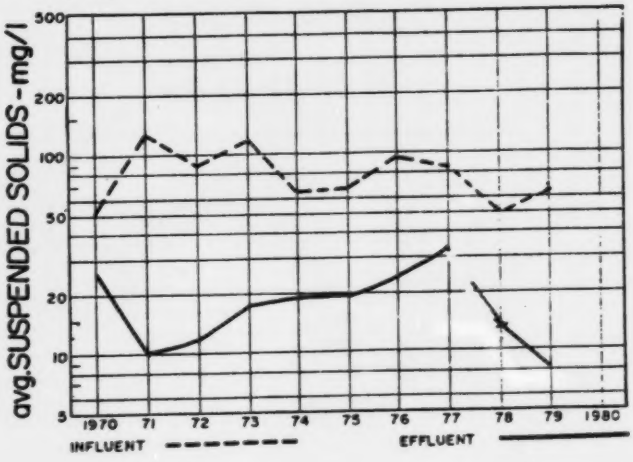
SLUDGE HANDLING

Type: Fixed cover, integral heat exchanger coils
Size: One 20' dia x 17' 4"
(6,000 cu ft or 37,500 gal)
Loading: 1.5 lb/cu ft/mo









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000668 BATAWA WPCP

MUNICIPALITY : SIDNEY TWP (BATAWA)
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 15,821
POPULATION SERVED : 400
PERCENT SERVED : 2.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.588 1000 M3 DESIGN BOD5 : 220.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	26.821	.865	1.500		48.0	2.2	95	1.2	51.0	9.1	82	1.1	2.9	.8	72	.056
FEB	9.365	.318	.455		42.0	9.5	77	.3	42.0	6.1	85	.3	2.6	.9	65	.016
MAR	14.729	.475	1.227		32.0	12.0	62	.2	45.0	11.0	75	.5	3.1	.8	74	.034
APR	13.450	.448	1.500		21.0	2.5	88	.2	38.2	7.0	81	.4	5.0	1.5	70	.047
MAY	9.610	.310	.310		34.5	2.0	94	.3	66.5	12.5	81	.5	3.9	.9	75	.028
JUN	12.372	.412	.737		54.0	2.0	96	.6	93.0	6.0	93	1.0	4.3	1.6	60	.032
JUL	19.818	.639	1.136	1.181	10.5	2.8	73	.1	80.9	8.1	89	1.4	4.0	1.1	73	.059
AUG	30.343	.978	1.360	1.318	42.0	5.0	88	1.1	47.5	10.0	78	1.1	3.8	1.1	71	.082
SEP	9.388	.312	1.013	1.181	43.0	3.1	92	.3	86.0	7.5	88	.5	2.4	.8	66	.015
OCT	23.015	.742	1.015	1.181	30.0	4.0	86	.5	93.3	7.3	92	1.9	4.5	.9	79	.082
NOV	41.970	2.260	2.907	1.000	30.0	10.0	68	.8	77.0	1.2	98	3.1	5.2	1.1	78	.172
DEC	19.000	.813	3.311	3.364	34.9	5.5	84	.5	87.5	11.5	86	1.4	3.7	1.0	71	.090
TOTAL	229.881							6.6				13.7				.873
AVERAGE		.698			35.1	5.0	85		65.6	8.1	87		3.7	1.0	72	
MAXIMUM			3.311	3.364												
NO. OF SAMPLES					19	18			69	71			69	71		

DESIGN DATA - METRIC

PROJECT Town of Trenton WPCP

PROJECT NO. 1-0210-69

DESIGN FLOW 15.9 $10^3m^3/d$

TREATMENT Conventional Secondary

DESIGN BOD 250 mg/l

DESIGN SS 300 mg/l

PUMPING STATIONS

Dundas St. 3 pumps operating at 1150 r/min equipped with 111.9 kW motors Supplying 20.5 $10^3m^3/d$ @38.2m TDH Standby diesel generator 125 kW @ 156.25 kVA

Bay St. 2 pumps operating at 1150 r/min equipped with 44.7 kW motors Supplying 80.0 $10^3m^3/d$ @ 30.5m TDH Standby diesel generator 125 kW @ 156.25 kVA

PRIMARY TREATMENT

Screening - .91m barminutor units

Grit Removal

One aerated grit tank 14.4m x 4.8m x 3.4m deep @ DWF.

Primary Clarifiers

- Two rectangular tanks, each 15.5m x 9.8m x 3.7m SWD @ 34.4 $m^3/m^2.d$
- Sludge collection by chain flight longitudinal & cross collectors.
- Three plunger-type raw sludge and sludge transfer pumps, each rated @ 7.57 l/s @ 24.4m TDH with 5.6 kW motors.
- Scum collector flights at the surface
- Two torque flow scum pumps rated at 3.8 l/s @ 18.3m TDH with .5 kW 1800 RPM motors.

Vortex Chambers

- One V.C. to bypass 2.5 DWF to chlorine contact tank after primary clarifier.
- Two V.C.'s to transfer 2 DWF from aeration tanks to final clarification tanks.

SECONDARY TREATMENT

Aeration Tanks

Two aeration tanks 40.2m x 8m x 4.6m deep with two passes in each tank. 4.15 hours detention @ DWF plus 30% return sludge.

Blower Equipment

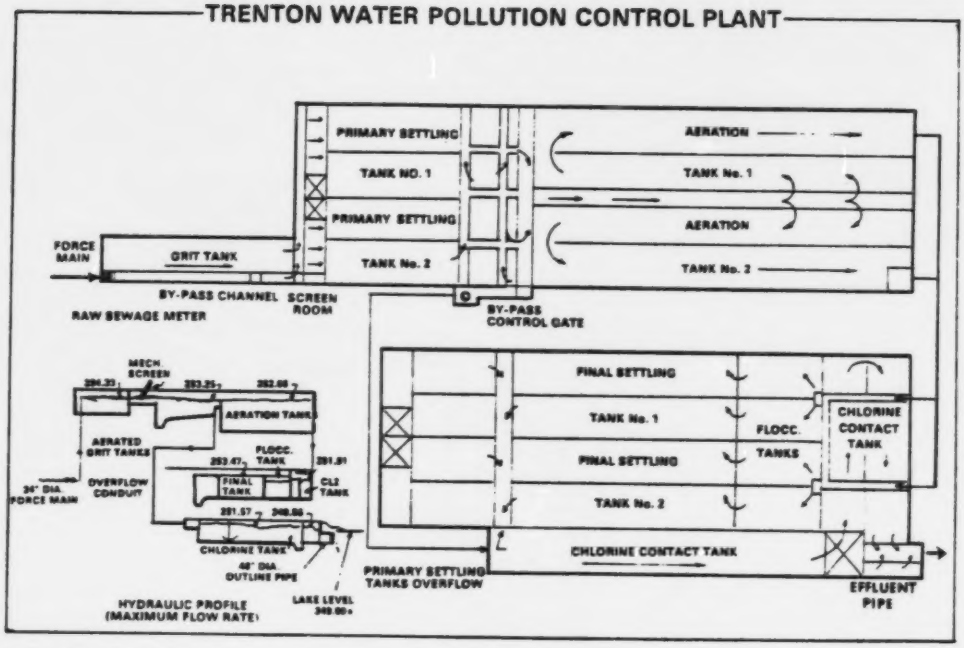
Four 1170.1 l/s centrifugal units for the aeration tanks and channel aeration 149.1 kW 3600 RPM motors.
Two 54.3 l/s positive displacement units for the grit tank. 1200 RPM motors.

Final Clarifiers

- Two rectangular tanks 41.4m x 9.8m x 3.7m SWD @ 39.1 $m^3/m^2.d$ Sludge collection by chain flight longitudinal and cross collectors.
- Two horizontal non-clog return activated sludge pumps each rated @ 184.0 l/s @ 17.7m TDH driven by 44.7 1200 RPM motors

Chlorine Contact Chamber

- Two gas chlorinators. 153.6 kg/day or influent, effluent and return activated sludge. 87min. detention
- Scum and sludge collection - travelling bridge on first pass of contact chamber.
- Two sludge and scum torque flow pumps rated at 3.8 l/s @ 24.4m TDH driver by 11.2kw 1800 RPM motors.



DESIGN DATA - IMPERIAL

PROJECT Town of Trenton WPCP

PROJECT NO. 1-0210-69

DESIGN FLOW 3.5 MIGD

TREATMENT Conventional Secondary

DESIGN BOD. 250 mg/l

DESIGN SS 300 mg/l

PUMPING STATIONS

Dundas St. 3 pumps operating at 1150 RPM equipped with 150 Hp motors supplying 4.5 MIGD @ 109' TDH. Standby diesel generator 125 kW @ 156.25 kVA

Bay St. 2 pumps operating at 1150 RPM equipped with 60 Hp motors supplying 1.8 MIGD @ 100' TDH. Standby diesel generator 125 kW @ 156.25 kVA.

PRIMARY TREATMENT

Screening - 2.36" barminutor units.

Grit Removal

One aerated grit tank 51'x15.75x11' deep @ DWF.

Primary Clarifiers

- Two rectangular tanks, each 78'x32'x12' SWD @ 700 IGPD/ft^2.
- Sludge collection by chain flight longitudinal & cross collectors.
- Three plunger-type raw sludge and sludge transfer pumps, each rated at 100 IGPM @ 80' TDH with 7½ Hp motors.
- Scum collector flights at the surface.
- Two torque flow scum pumps rated at 50 IGPM @ 60' TDH with 10 Hp, 1800 RPM motors.

Vortex Chambers

- One V.C. to bypass 2.5 DWF to chlorine contact tank after primary clarifier.
- Two V.C.'s to transfer 2 DWF from aeration tanks to final clarification tanks.

SECONDARY TREATMENT

Aeration Tanks

Two aeration tanks 132'x32'x15' deep with two passes in each tank. 4.15 hours detention @ DWF plus 30% return sludge.

Blower Equipment

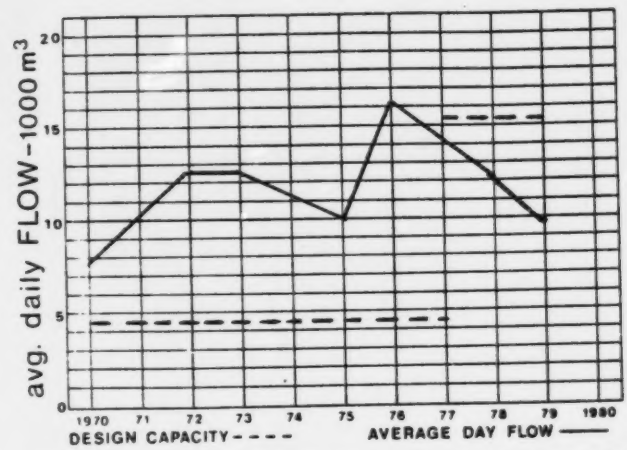
- Four 2800 CFM centrifugal units for the aeration tanks and channel aeration 200 Hp 3600 RPM motors.
- Two 130 CFM positive displacement units for the grit tank. 10 Hp 1200 RPM motors.

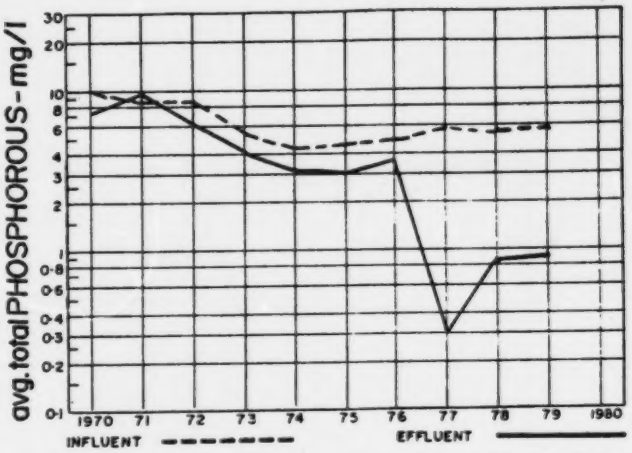
Final Clarifiers

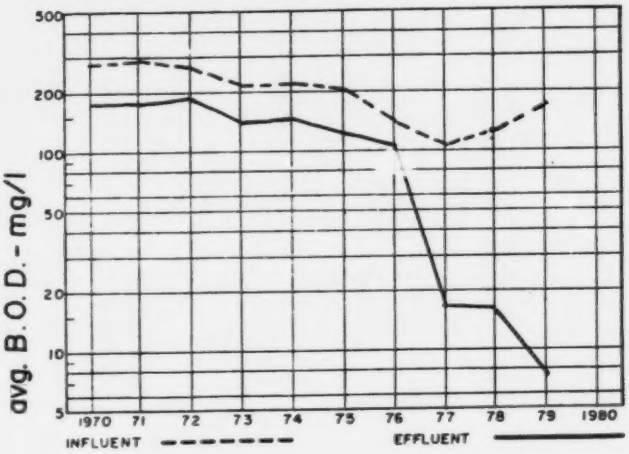
- Two rectangular tanks 136'x32'x12' SWD @ 820 IGPD/ft^2. Sludge collection by chain flight longitudinal and cross collectors.
- Two horizontal non-clog return activated sludge pumps each rated @2430 GPM @ 58' TDH driven by 60 Hp 1200 RPM motors.

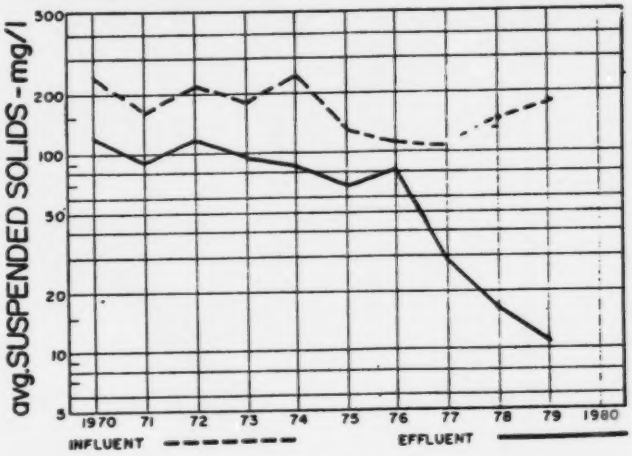
Chlorine Contact Chamber

- Two gas chlorinators, 1000 lb/day for influent, effluent and return activated sludge. 87min. detention.
- Scum and sludge collection by travelling bridge on first pass of contact chamber.
- Two sludge and scum torque flow pumps rated at 50 GPM @ 80' TDH driven by 15 Hp 1800 RPM motors.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000775 TRENTON WPCP

MUNICIPALITY : TRENTON
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION	: 14,784
POPULATION SERVED	: 15,000
PERCENT SERVED	: 101.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 18.911 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	303.809	9.800	12.138	29.549	217.0	5.3	97	64.3	141.0	7.6	94	40.5	2.6	1.0	61	.486
FEB	267.487	9.559	15.092	26.367	145.0	10.0	93	36.1	182.0	8.0	95	41.1	3.3	1.1	66	.588
MAR	435.598	14.051	19.366	44.005	88.0	7.2	91	35.1	131.0	10.4	92	52.5	4.0	.7	82	1.437
APR	440.700	14.690	25.860	34.000	160.3	8.9	94	66.7	119.0	14.6	87	45.9	5.5	1.1	79	1.935
MAY	324.480	10.470	15.570	41.000	135.6	6.4	95	41.9	161.9	7.7	95	50.0	4.0	.7	82	1.087
JUN	241.070	8.030	9.870	19.000	86.0	3.2	96	19.9	169.8	10.7	93	38.3	8.5	.2	97	1.991
JUL	204.170	6.580	8.540	33.000	148.0	8.1	95	38.5	238.0	14.0	94	45.3	8.5	.6	92	1.603
AUG	225.470	7.270	9.300	22.000	184.0	3.3	98	40.7	233.0	8.9	96	50.5	6.6	.5	91	1.385
SEP	234.960	7.832	11.200	38.000	213.0	4.0	98	49.1	261.0	7.5	97	59.5	7.6	1.2	84	1.504
OCT	259.650	8.370	10.340	20.000	185.0	7.0	96	48.2	229.8	8.8	96	57.3	7.3	.6	91	1.748
NOV	283.610	9.450	18.370	40.000	214.0	6.4	97	58.8	219.8	18.7	91	57.0	7.2	.6	91	1.866
DEC	291.270	9.390	14.000	28.000	210.0	17.3	91	56.1	188.0	30.0	82	40.1	6.6	3.1	53	1.034
TOTAL	3512.274							543.8				578.5				18.641
AVERAGE		9.624			165.3	7.0	95		188.0	12.2	93		5.9	.9	83	
MAXIMUM			25.860	44.005												
NO. OF SAMPLES					40	39			209	208			32	29		

Ministry of the Environment
Ontario

Northeastern Region

⑤

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

Sault Ste. Marie
445 Albert St. E.
705-949-4640

Timmins
83 Algonquin Blvd. W.
705-264-9474

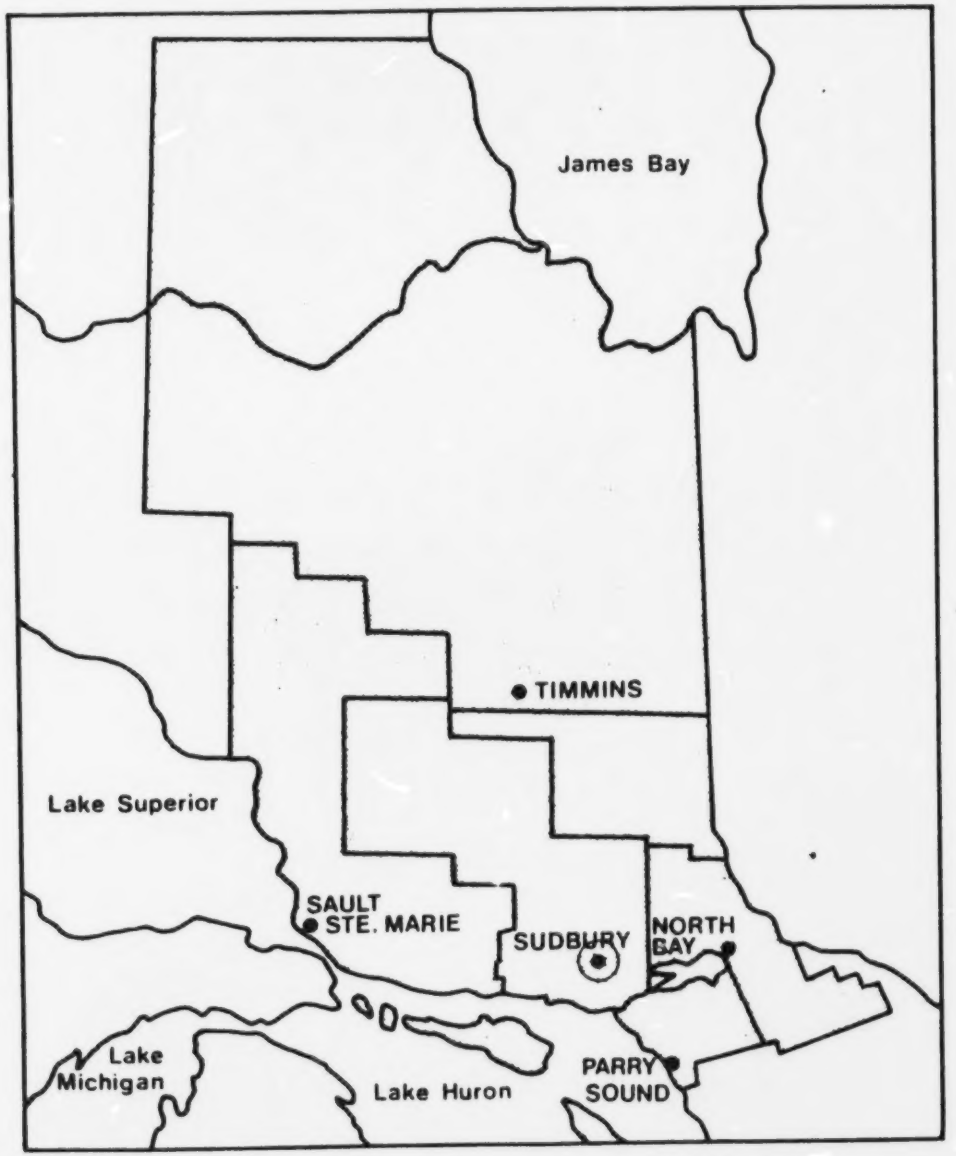
Parry Sound
74 Church St.
705-746-2139

Northeastern Region

5

Ministry of the Environment

Ontario



DESIGN DATA - METRIC

NORTH BAY

PROJECT: City of North Bay WPCP

PROJECT NUMBER: [illegible]-9161-68

TREATMENT: Conventional Secondary

DESIGN FLOW: 36.4 $10^3 m^3/d$

BOD - Raw Sewage 150 mg/l
- Removal 85%

PRIMARY TREATMENT

GRIT REMOVAL
Type: Aerated grit tank
Size: two, (each) 14.6m x 4.9m x 4.0m awl
(each: 238.2m^3)
Retention: (each) 22.4 min

SCREENS
Type: two, Mechanical

SEWAGE LIFT PUMPS
Type: WORTHINGTON
Two, variable-speed
One, constant-speed
Size: (total) 72.7 $10^3 m^3/d$

PRIMARY SEDIMENTATION
Type: Four, 72.7m x 9.1m x 3.4m
(3369.9m^3 total)
Retention: 2.2 hr

SECONDARY TREATMENT

AERATION TANKS
Type: Diffused Air, two-pass
Size: Two 56.4m x 9.1m x 3.7m per pass
(5037.0m^3 total)
Retention: 3.3 hr

RETURN SLUDGE PUMPS
Type: WORTHINGTON
Size: Two, 41.6 l/s

SECONDARY SEDIMENTATION
Type: WALKER RSX
Size: Four, 18.3m x 18.3m x 3.4m
(4493.3m^3 total)
Retention: 3.0 hr
Loading: Surface 26.9m^3/m^2.d
Weir - 119.2m^3/m.d

CHLORINATION
Type: four-pass
Size: Two, 11.5m x 2.4m x 1.2m each
(448.7m^3 total)
Retention: 18 min.

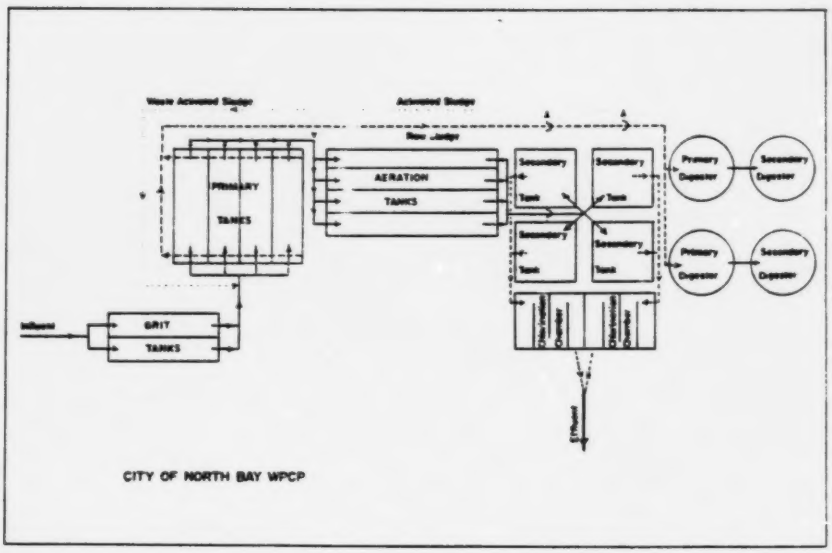
OUTFALL
339.9m into Lake Nipissing

SLUDGE HANDLING

DIGESTION SYSTEM
Type: Two-Stage

Primary -
Type: DORR
Size: Two, 19.8m dia x 6.7m swd
(4141.4m total)

Secondary -
Size: Two, 19.8m dia. x 6.7m swd
(4141.4m^3 total)



CITY OF NORTH BAY WPCP

DESIGN DATA - IMPERIAL

PROJECT: City of North Bay WPCP

PROJECT NUMBER:

TREATMENT: Conventional Secondary

DESIGN FLOW: 8.0 mgd

BOD - Raw Sewage 150 mg/l
- Removal 85%

PRIMARY TREATMENT

GRIT REMOVAL
Type: Aerated grit tanks
Size: two, (each) 48' x 16' x 13' awl
(each: 82,300 I.G.)
Retention: (each) 22.4 min

SCREENS
Type: two, Mechanical

SEWAGE LIFT PUMPS
Type: WORTHINGTON
Two, variable-speed
One, constant-speed
Size: (total) 16 mgd

PRIMARY SEDIMENTATION
Type: Four, 90' x 30' x 11'
(741,300 I.G. total)
Retention: 2.2 hr

SECONDARY TREATMENT

AERATION TANKS
Type: Diffused Air, two-pass
Size: Two, 185' x 20' x 12' per pass
(1,108,000 I.G. total)
Retention: 3.3 hr

RETURN SLUDGE PUMPS
Type: WORTHINGTON
Size: Two, 550 gpm

SECONDARY SEDIMENTATION
Type: WALKER RSX
Size: Four, 60' x 60' x 11'
(988,400 I.G. total)
Retention: 3.0 hr
Loading: Surface-550 gal/ft^2/day
Weir - 8,000 gal/ft/day

CHLORINATION
Type: four-pass
Size: two, 39' x 7.8' x 6.5' each pass
(98,700 I.G. total)
Retention: 18 min.

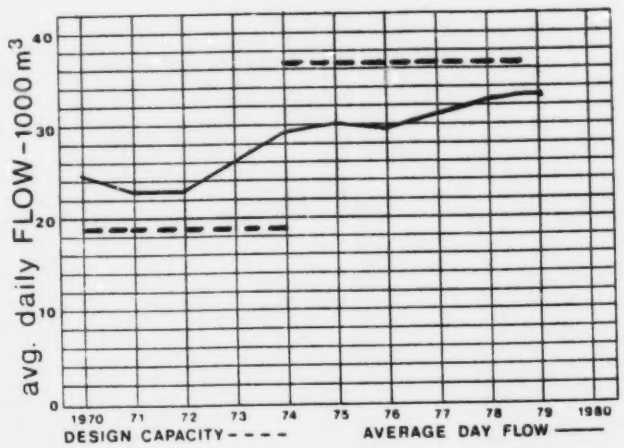
OUTFALL
-1115 ft into Lake Nipissing

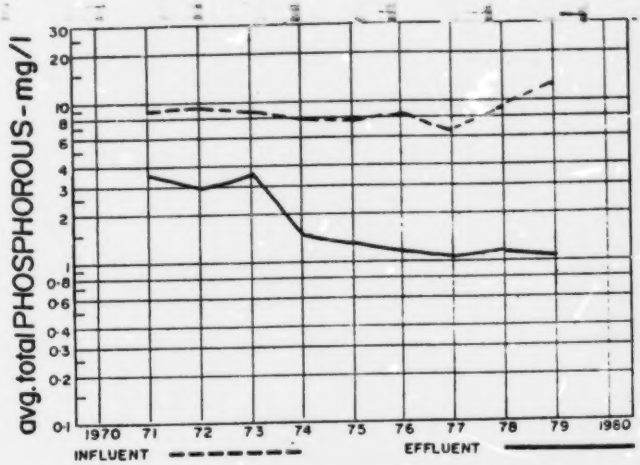
SLUDGE HANDLING

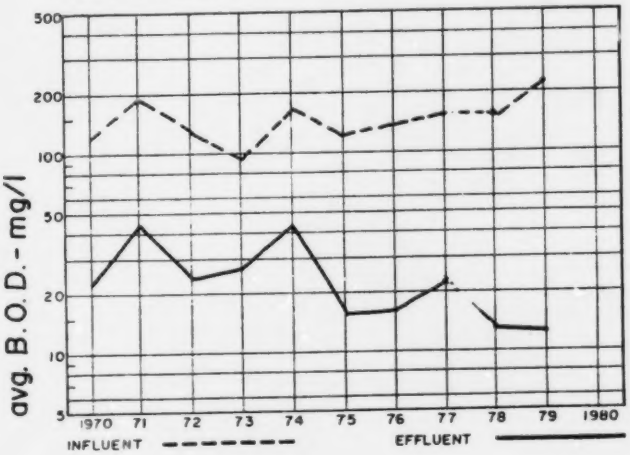
DIGESTION SYSTEM
Type: Two-Stage

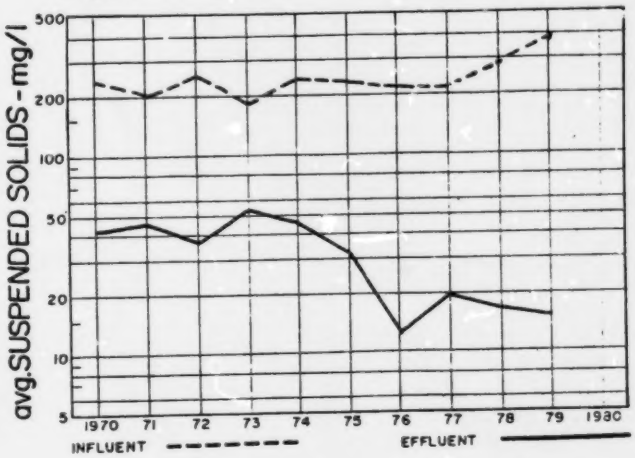
Primary --
Type: DORR
Size: Two, 65' dia x 22' swd
(911,000 I.G. total)

Secondary --
Size: Two, 65' dia x 22' swd
(911,000 I.G. total)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000533 NORTH BAY WPCP

MUNICIPALITY : NORTH BAY
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 50,417
POPULATION SERVED : 45,000
PERCENT SERVED : 89.2

* DATA NOT AVAILABLE

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 38.368 1000 M3 DESIGN BOD5 : 150.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION			REDUCTION			REDUCTION			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	746.453	24.080	27.685	40.914	238.0	17.8	92	164.3	240.0	19.5	91	164.5	12.7	1.8	85	8.126
FEB	712.176	25.458	33.504	53.643	293.0	16.0	94	197.2	250.0	18.0	92	165.2	11.2	2.0	82	6.552
MAR	1362.000	43.900			145.0	15.0	89	177.0	189.0	20.0	89	230.1	6.1	1.0	83	6.948
APR	1414.290	47.100	67.200	1871.470	137.2	9.3	93	180.8	275.6	12.0	95	372.8	7.1	.9	87	8.769
MAY	1306.200	42.100	56.200	100.000	169.8	10.2	93	208.4	247.9	9.7	96	311.1	9.7	.8	91	11.625
JUN	919.700	30.700	41.800	52.700	194.0	8.5	95	170.6	337.6	11.5	96	299.9	12.5	1.3	89	10.301
JUL	837.919	27.030	30.050	46.370	239.0	14.5	93	188.1	328.0	10.7	96	265.8	10.8	1.4	88	7.860
AUG	977.845	31.540	45.910	63.600	251.0	16.3	93	229.5	552.0	13.7	97	526.3	16.8	.9	94	15.548
SEP	857.057	28.570	45.320	47.307	*	*			463.0	18.0	96	381.3	13.0	1.0	92	10.285
OCT	1001.120	32.290	46.010	* 72.740	*	*			662.0	15.5	97	647.2	15.1	.8	95	15.317
NOV	1020.895	34.030	46.550	69.100	212.0	12.0	94	204.1	489.0	16.0	96	482.8	14.9	1.0	93	14.170
DEC	950.887	30.674	38.190	57.280	283.6	15.4	94	255.0	605.8	17.2	97	559.6	15.0	.8	94	13.503
TOTAL	12106.542							1975.4				4407.2				129.012
AVERAGE		33.123			216.2	13.5	93		386.6	15.1	96		12.1	1.1	90	
MAXIMUM			67.200	1871.470												
NO. OF SAMPLES					32	32			227	212			50	51		

DESIGN DATA - METRIC

STURGEON FALLS

PROJECT Town of Sturgeon Falls WPCP
PROJECT NO.: 1-0012-66
TREATMENT: Conventional Activated Sludge
DESIGN FLOW: 4.546 $10^3 m^3/d$
BOD: Raw Sewage 180 mg/l
SS: Raw Sewage 200 mg/l

PUMPING STATIONS:
Two, prefabricated, each with 94.6 l/s pump
One, built in place, 28.4 l/s pump
One, built in place, 78.7 l/s pump

PRETREATMENT

DETRITOR:
One, 3.7m dia. x 1.6m swd
Volume: $5.0m^3$ Detention: 1.6 min.

COMMINUTOR:
Capacity: 18.1 $10^3 m^3/d$

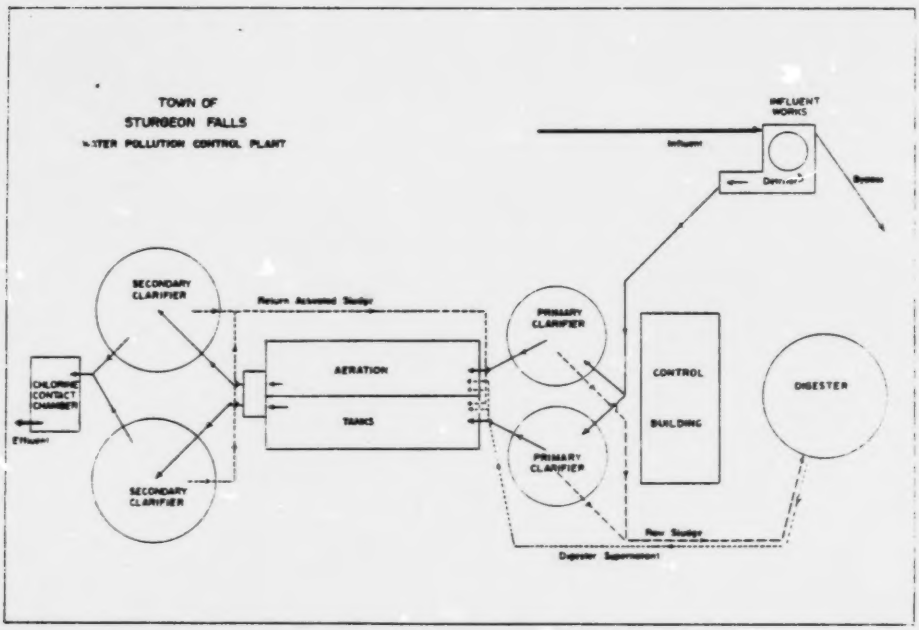
BAR SCREENS:
In channel, after comminutor

PRIMARY CLARIFIERS:
Two, 11.0m dia. x 3.0m swd
Volume: (total) $577.3m^3$
Detention 3.0 hours
Overflow rate: $24.0 m^3/m^2 \cdot d$

AERATION TANKS:
Two, 12.8m x 5.5m x 4.3m
Volume: (total) $600.m^3$
Detention: 3.2 hours
Blowers: two, 1805.3 l/s

SECONDARY CLARIFIERS
Two, 11.0m dia x 3.0m swd
Volume: (total) $577.3m^3$
Detention: 3.0 hours
Surface overflow rate: $24.0 m^3/m^2 \cdot d$

DIGESTER:
Size : 13.7m dia. x 6.1m swd
Volume: $900.6m^3$
CHLORINE CONTACT CHAMBER:
Four passes, each 4.9m x 1.9m x 3.6m swd (avg)
Volume: $131.8m^3$ Detention: 42 min.



DESIGN DATA - IMPERIAL

Project Town of Sturgeon Falls WPCP

Project No:	1-0012-66
Treatment:	Conventional Activated Sludge
Design Flow:	1 MGD
BOD:	Raw Sewage 180 mg/l
SS:	Raw Sewage 200 mg/l

PUMPING STATIONS:
Two, prefabricated, each with 1250 IGPM pump
One, built in place, 375 IGPM pump.
One, built in place, 1040 IGPM pump.

PRETREATMENT

DETRITOR:
One, 12' dia. x 1.6' swd
Volume: 1100 I. Gal Detention: 1.6 min.

COMMINUTOR:
Capacity: 4 MGD

BAR SCREENS:
In channel, after comminutor

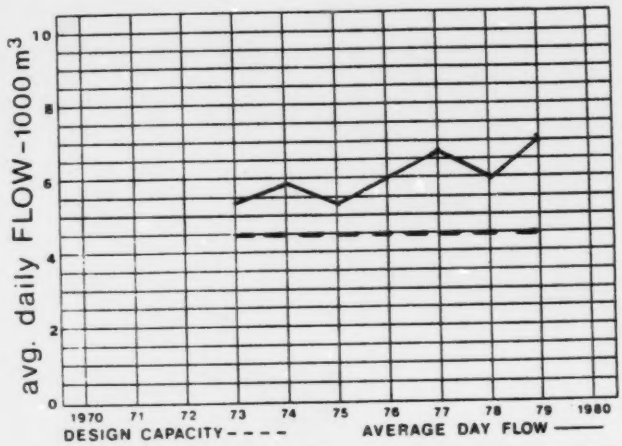
PRIMARY CLARIFIERS:
Two, 36' dia. x 10' swd
Volume: (total) 127,000 I. Gal.
Detention: 3.0 hours
Overflow rate: 490 I. Gal/ft^2/day

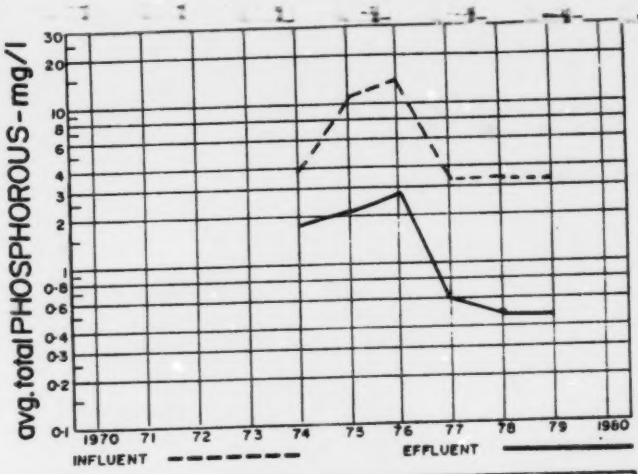
AERATION TANKS:
Two, 42' x 18' x 14' swd
Volume: (total) 132,000 I. Gal.
Detention: 3.2 hours
Blowers: two, each 4320 cfm

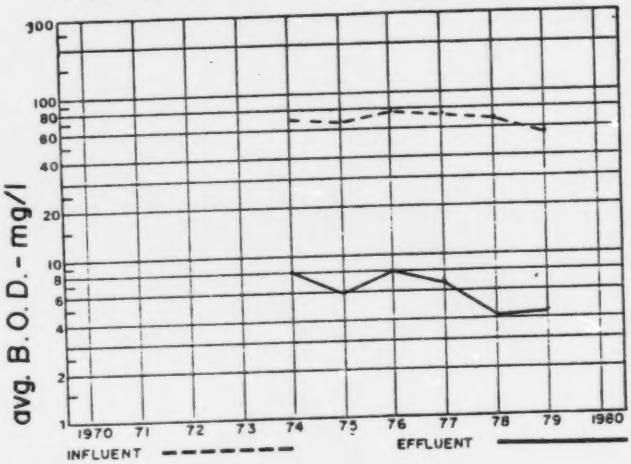
SECONDARY CLARIFIERS:
Two, 36' dia. x 10' swd
Volume: (total) 127,000 I. gal.
Detention: 3.0 hours
Surface overflow rate: 490 gal/ft^2/day.

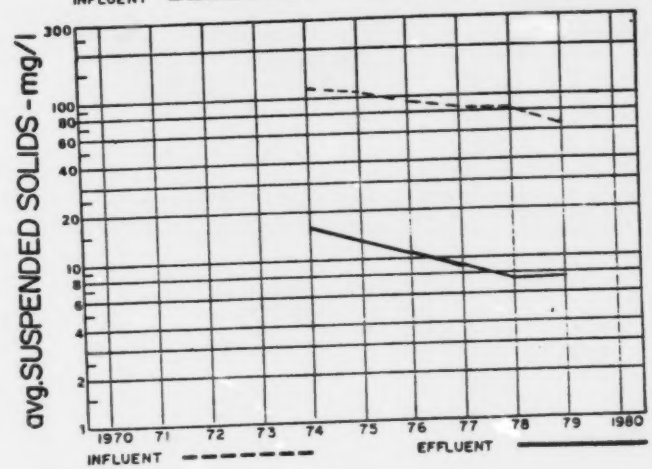
DIGESTER:
45' dia. x 20' swd
Volume: 31800 ft^3

CHLORINE CONTACT CHAMBER:
Four passes, each 16' x 4.2' x 11.75' swd (avg)
Volume: 29000 I. Gal. Detention: 42 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001435 STURGEON FALLS WPCP

MUNICIPALITY : STURGEON FALLS
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 6,289
POPULATION SERVED : 6,199
PERCENT SERVED : 98.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.546 1000 M3 DESIGN BOD5 : 180.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	130.161	4.201	4.587	15.911	75.0	1.3	98	9.5	66.0	4.0	93	8.0	3.7	.5	86	.417
FEB	139.594	4.987	7.119	18.184	64.0	8.8	86	7.7	66.0	8.4	87	8.0	4.4	1.0	77	.475
MAR	330.040	10.456	15.911	25.003	42.0	6.5	84	11.7	60.0	20.0	66	13.2	2.2	.5	77	.581
APR	378.421	12.610	19.386	20.454	35.0	4.5	87	11.5	47.0	12.0	74	13.2	2.0	.4	77	.587
MAY	218.004	7.032	9.142		36.0	4.3	88	8.9	47.0	6.4	86	8.8	2.4	.3	86	.453
JUN	183.782	6.126	7.728	18.184	55.0	2.7	95	9.6	65.0	5.6	91	10.9	3.7	.4	87	.595
JUL	169.599	5.471	8.925	16.000	47.0	4.0	91	7.2	60.0	6.0	90	9.1	3.3	.6	79	.446
AUG	221.460	7.144	13.012	16.000	55.0	2.5	95	11.6	76.0	7.0	90	15.2	3.0	.3	88	.587
SEP	203.601	6.787	9.878	16.000	43.0	4.0	90	7.9	71.0	7.0	90	13.0	3.2	.5	81	.531
OCT	181.063	5.840	7.814	16.000	80.0	4.7	94	13.6	84.0	6.6	92	14.0	4.3	.5	87	.684
NOV	233.789	7.790	11.808	20.457	78.0	6.0	92	16.8	70.0	6.0	91	14.9	3.5	.4	86	.706
DEC	190.727	6.152	8.000	20.457	50.0	2.5	95	9.0	70.0	.5	99	13.2	3.4	.2	91	.595
TOTAL	2580.241							123.4				142.0				6.837
AVERAGE		7.050			55.0	4.3	92		65.1	7.4	88		3.2	.5	84	
MAXIMUM			19.386	25.003												
NO. OF SAMPLES					22	22			58	57			22	22		

DESIGN DATA - METRIC

VALLEY EAST (H., V.C. & V.T.)

PROJECT: Valley East WPCP

PROJECT NO: 1-0039-66

TREATMENT: Conventional Secondary

DESIGN FLOW: 11.4 $10^3 m^3/d$

RAW SEWAGE P.S.

Type: One, Smart-Turner
Size: 75.7 l/s

Type: Three
Size: each 151.4 l/s

AERATED GRIT TANK

Size: 4.6 m x 4.6 m x 3.0 m
Volume: 63.6 m^3
Retention: 8.1 min

PRIMARY CLARIFIERS

Type: Two, 2-pass
Size: Each pass 3.8 m x 30.5m x 2.9 m swd
Volume (Total): 1345.6 m^3
Retention: 2.8 hr.

AERATION TANKS

Type: Two, rectangular
Size: Each 7.6 m x 51.8 m x 4.3 m
Volume (Total): 3377.7 m^3
Retention: 7.1 hr

SECONDARY CLARIFIERS

Type: Two, 2-pass
Size: Each pass
4.8 m x 38.1 m x 2.9 m swd
Volume (total): 2123.0 m^3
Retention: 4.5 hr.

SLUDGE DIGESTION

PRIMARY DIGESTER

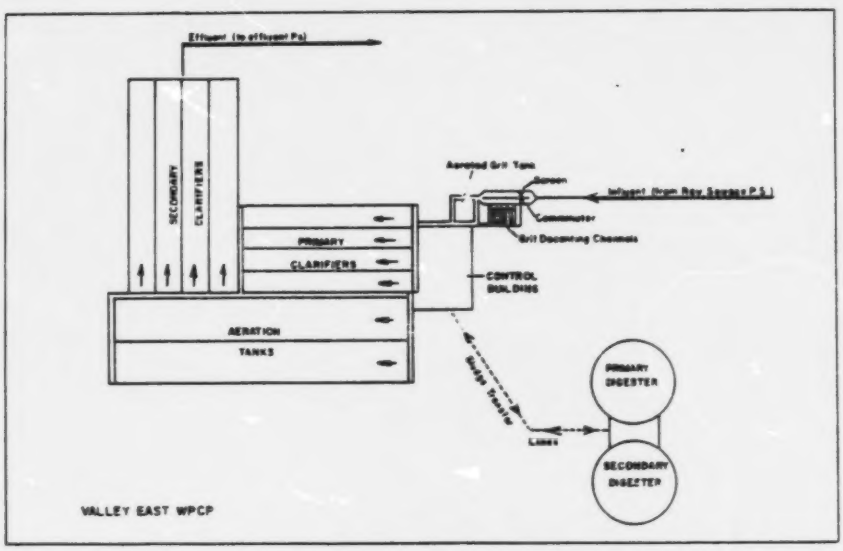
Size: 15.2 m i.d. x 4.3 m swd
Volume: 1113.8 m^3

SECONDARY DIGESTER

Size: 15.2 m i.d. x 4.3 m swd
Volume: 1113.8 m^3

EFFLUENT P.S.

Type: Two, Worthington
Size: Each 45.5 l/s



DESIGN DATA - IMPERIAL

PROJECT: Valley East WPCP

PROJECT NO. 1-0039-66

TREATMENT: Conventional Secondary

DESIGN FLOW: 2.5 MIGD

RAW SEWAGE P.S.
Type: One, Smart-Turner
Size: 1000 IGPM

Type: Three,
Size: Each 2000 IGPM

AERATED GRIT TANK
Size: 15' x 15' x 10' swd
Volume: 14,000 I.G.
Retention: 8.1 min

PRIMARY CLARIFIERS
Type: Two, 2-pass
Size: Each pass 12.5'x100'x9.5'swd
Volume(total): 296,000 I.G.
Retention: 2.8 hr

AERATION TANKS
Type: Two, rectangular
Size: each 25'x170'x14'swd
Volume (total): 743,000 I.G.
Retention: 7.1 hr

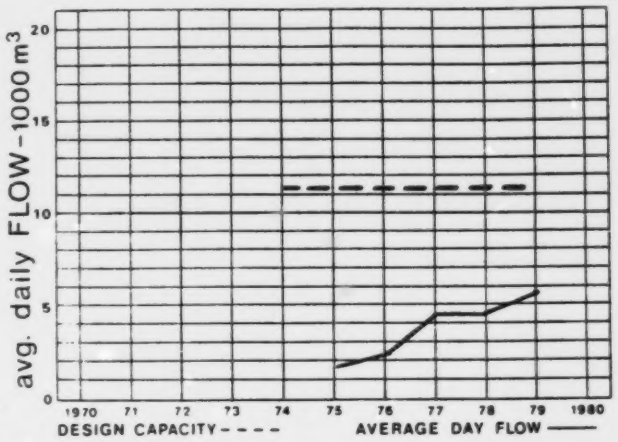
SECONDARY CLARIFIERS
Type: Two, 2-pass
Size: Each pass
15.75' x 125' x 9.5' swd
Volume(total): 467,000 I.G.
Retention: 4.5 hr

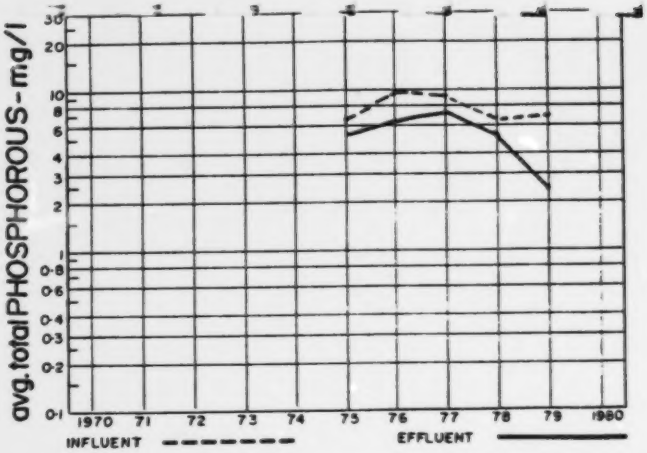
SLUDGE DIGESTION

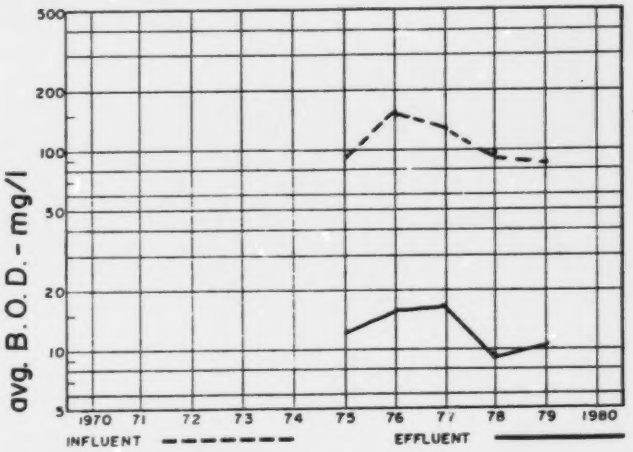
PRIMARY DIGESTER
Size: 50' i.d. x 14' swd
Volume: 245,000 I.G.

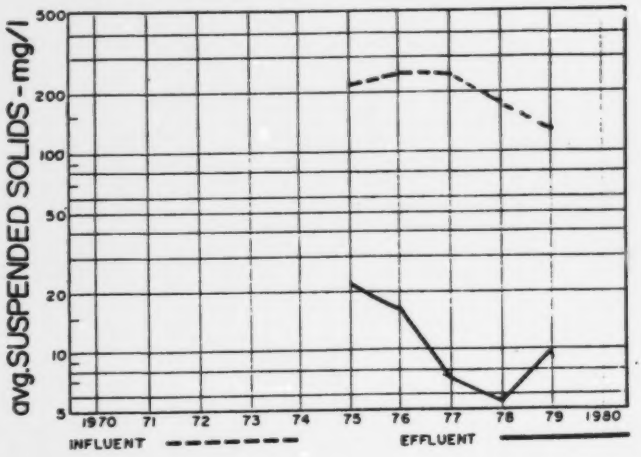
SECONDARY DIGESTER
Size: 50' i.d. x 14' swd
Volume: 245,000 I.G.

EFFLUENT P.S.
Type: Two, Worthington
Size: Each 4323 IGPM









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001541 HANNER, VAL CARON, VAL THERESE

MUNICIPALITY : VALLEY EAST
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 20,825
POPULATION SERVED : 14,700
PERCENT SERVED : 70.5

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 11.365 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	108.290	3.491	3.921		130.0	22.0	83	11.6	189.0	16.0	90	18.5	6.4	2.4	62	.433
FEB	96.171	3.437	3.973		117.0	8.7	92	10.4	145.0	7.7	94	13.2	10.9	3.8	65	.683
MAR	163.079	5.264	8.083		72.0	6.0	91	10.7	104.0	5.8	94	16.0	6.7	3.4	49	.538
APR	392.200	13.070	20.120		34.0	4.0	88	11.7	139.0	11.4	91	50.0	*	*		
MAY	259.670	8.370	14.940		40.0	8.0	85	8.8	46.0	9.6	79	9.4	4.2	.6	84	.924
JUN	141.000	4.700	5.690		73.0	26.0	64	6.6	121.0	8.7	92	15.8	7.0	2.1	89	.887
JUL	120.666	3.892	4.630		90.0	5.0	94	10.2	179.0	4.3	97	21.0	5.4	1.0	81	.531
AUG	120.220	3.870	4.620		82.7	11.0	82	6.2	140.0	6.3	95	16.0	6.5	4.0	38	.301
SEP	122.354	4.078	5.150		89.5	6.5	92	10.1	114.0	4.7	95	13.3	7.8	4.4	43	.418
OCT	122.946	3.966	4.500		93.5	4.0	95	11.0	141.4	8.4	94	18.3	7.6	3.9	48	.455
NOV	143.190	4.773	7.230		98.0	14.5	85	11.9	144.0	23.5	83	17.2	6.7	3.7	44	.430
DEC	135.185	4.361	5.600		72.0	9.0	87	8.5	170.0	8.6	96	22.0	5.8	3.6	37	.297
TOTAL	1924.971							118.1				227.3				5.695
AVERAGE		5.273			80.9	10.2	87		134.3	9.4	92		6.8	2.9	58	
MAXIMUM			20.120													
NO. OF SAMPLES					21	22			45	52			21	28		

EXTENDED AERATION / CONTACT STABILIZATION TREATMENT PLANTS

Ministry of the Environment
Ontario

Southwestern Region

(1)

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

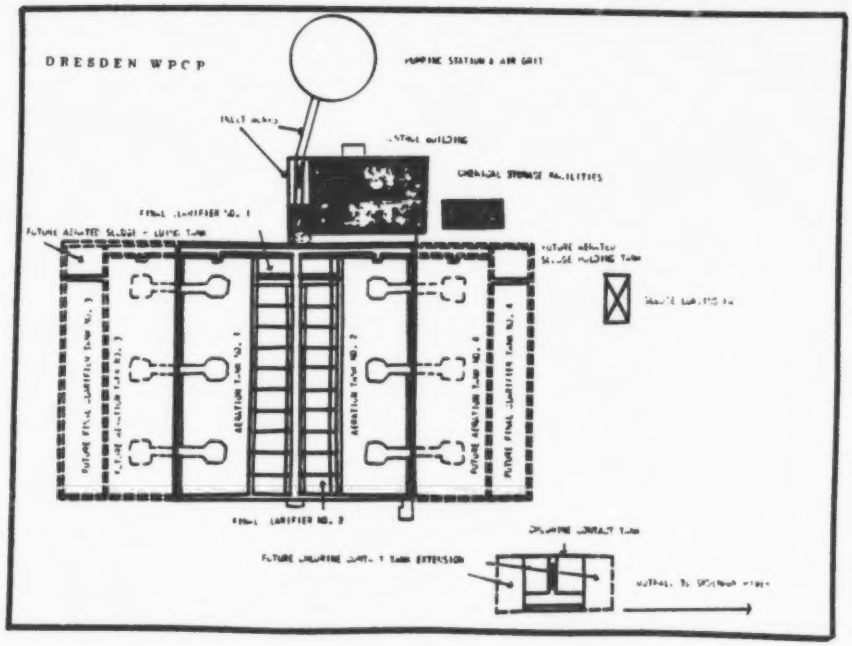
Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Southwestern Region

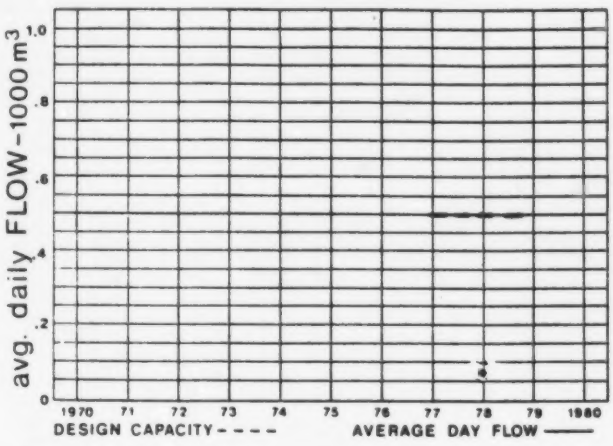
(1)

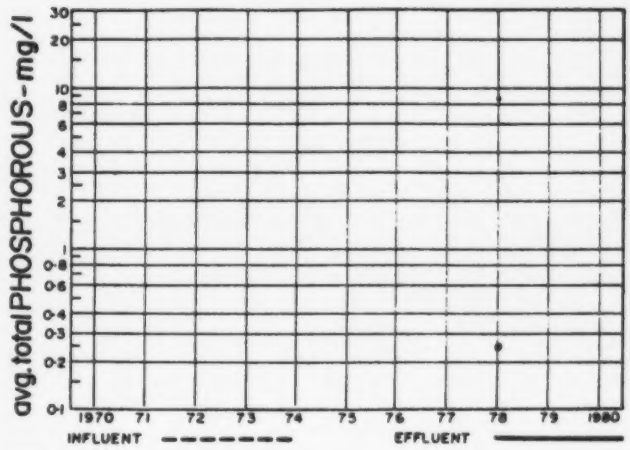
Ministry of the Environment

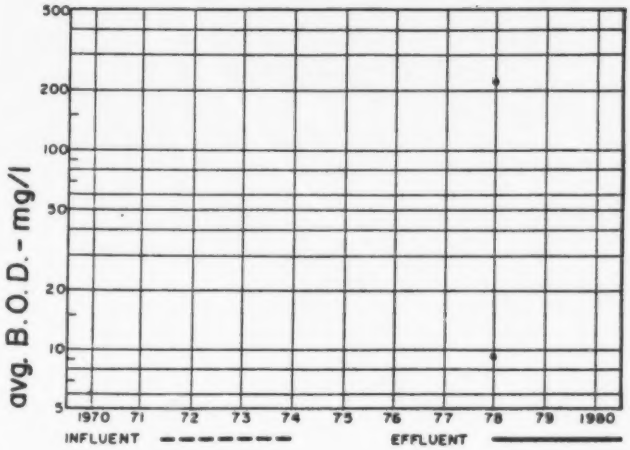
Ontario

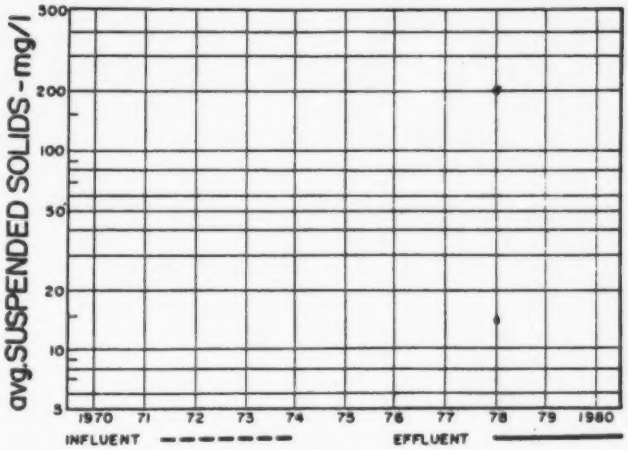

DRESDEN WPCP

DRESDEN









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002014 DRESDEN WPCP

MUNICIPALITY : DRESDEN
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 3,830
POPULATION SERVED : 2,200
PERCENT SERVED : 57.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.546 1000 M3 DESIGN BOD5 : 284.0 MG/L DESIGN SUSP.SOLIDS : 218.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/76-DEC/76																
JAN	14.284	.461	.541	3.046	122.0	23.6	80	1.4	147.0	29.8	79	1.6	7.8	2.8	64	.071
FEB	13.537	.483	1.618	3.045	163.0	5.5	96	2.1	298.0	18.3	94	3.8	9.0	1.8	80	.097
MAR	17.752	.573	1.027	3.045	111.0	8.6	92	1.8	138.0	15.5	88	2.1	5.8	.8	86	.089
APR	26.253	.875	3.219	3.046	78.0	5.7	92	1.9	181.7	39.7	78	3.7	4.9	.5	89	.117
MAY	18.201	.587	.905	3.046	123.0	4.5	96	2.1	118.2	12.6	89	1.9	6.8	.5	92	.115
JUN	21.235	.707	.988	3.046	90.0	2.8	96	1.8	514.3	17.4	96	10.5	6.8	.5	92	.130
JUL	33.311	1.074	1.873	3.046	184.2	3.7	97	5.3	572.2	22.8	96	18.3	5.1	.5	90	.153
AUG	49.878	1.608	2.987	3.046	160.0	3.6	97	7.8	433.0	18.8	95	20.6	6.2	1.6	74	.229
SEP	66.425	2.214	3.046	3.046	171.3	3.9	97	11.1	178.7	14.7	91	10.8	3.4	.5	85	.193
OCT	51.706	1.667	3.134	3.046	188.0	5.2	97	9.4	232.2	21.8	90	10.8	5.9	.4	92	.283
NOV	37.761	1.258	1.763	3.046	137.5	7.5	94	4.9	270.0	30.3	92	9.4	6.0	.5	91	.208
DEC	41.168	1.328	2.178	3.046	164.0	6.8	95	6.4	178.0	13.7	92	6.6	7.7	.5	93	.296
TOTAL	391.511							56.3				100.7				1.981
AVERAGE		1.070			139.3	6.7	95		271.6	20.2	92		6.2	.9	85	
MAXIMUM			3.219	3.046												
NO. OF SAMPLES					48	48			50	50			50	50		

DESIGN DATA - METRIC

BELLE RIVER (MAIDSTONE)

PROJECT: Town of Belle River

PROJECT NO.: 1-0305-72

TREATMENT: Extended Aeration

DESIGN FLOW: 6.82 $10^3m^3/d$

BOD - Raw Sewage 300 mg/l

SS - Raw Sewage 300 mg/l

PUMPING STATION

Type: Two raw sewage pumps (one stand by)
Rate: 32.55 l/s @ 9.75 m TDH
Type: Two vertical centrifugal pumps
Rate: 82.03 l/s @ 20.73m TDH

PRIMARY TREATMENT

Inlet Works
Type: 24.77 10^3m^3 bar screens, 304.8 mm parshall flume, comminutor and by-pass

Grit Removal
Type: Aerated grit tank equipped with air diffusion equipment 20.9-41.8 l/s
Volume: (24.77 10^3m^3) 41.77 m^3
Size: 3.0m x 3.0m x 4.5m WD

SECONDARY TREATMENT

Aeration Tanks
Volume: 38.47 10^3m^3 Two 918.98 m^3 (1.84 10^3m^3 total) tanks
Contact Zone: 209.28m^3
Reaeration Zone: 709.70m^3
Aeration tanks are equipped with air diffusion equipment allowing 553.7 l/s
Contact Zone: 6.7m x 7.3m x 4.3m D
Reaeration Zone: 22.8m x 7.3m x 4.3m D

Air Supply
Type: Three identical centrifugal air compressors
Power: 111.9 kW, 1132.5 l/s

Final Clarifiers
Size: Two, 19.8m diameter with maximum sludge recirculation capacity 10.23 10^3m^3 per tank. Scum baffle and removable rotating skimming device.
Pump Type: Three identical horizontal centrifugal, variable speed drive activated sludge return pumps at 79.49 l/s @ 8.8m TDH. One scum pump at 3.79 10^3m^3.

CHEMICAL TREATMENT

Phosphorus Removal
Type: Chemical storage tank with two chemical metering pumps
Size: 18.18 m^3

Chlorination
Type: Two 226.8 kg/d chlorinators Chlorine contact chamber with two compartments.
Volume: 89.21 m^3
Size: 7.6m x 4.3m x 2.7m D

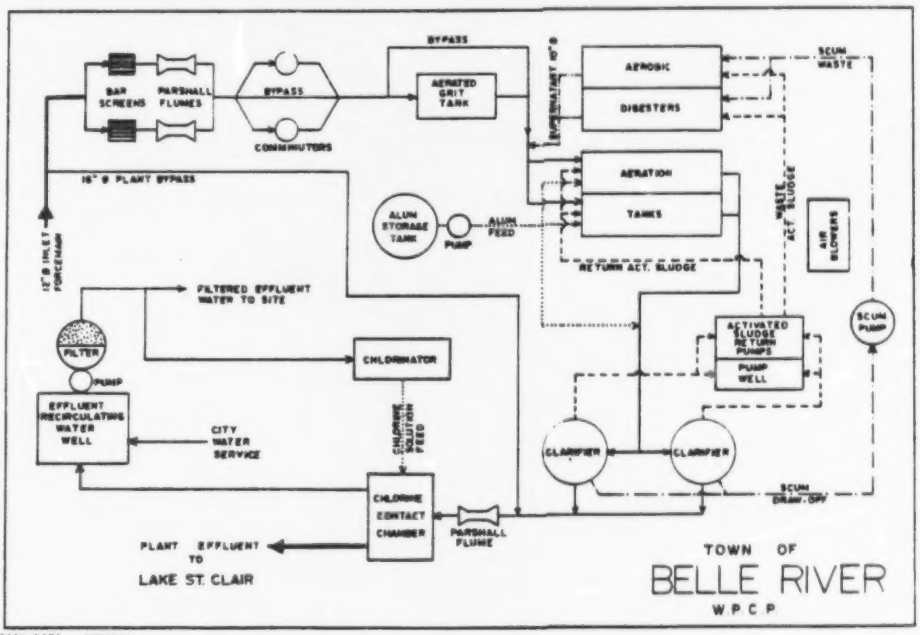
SLUDGE TREATMENT

Aerobic Digestors
Type: Two tanks. One equipped with air diffusion equipment allowing 557.9 l/s and decanting device.
Size: 29.9m x 6.1m x 4.3m D
Volume: 777.1 m^3

OUTLET WORKS

By-pass
From start of influent works to a point just ahead of effluent parshall flume.

Outfall
- to Lake St. Clair



DESIGN DATA - IMPERIAL

PROJECT Town of Belle River

PROJECT NO. 1-0305-72

TREATMENT Extended Aeration

DESIGN FLOW 1.5 MIGD

BOD - Raw Sewage 300 mg/l

SS - Raw Sewage 300 mg/l

PUMPING STATION

Two, raw sewage pumps (one standby) @430 IGPM each @ 32' TDH. Two vertical centrifugal pumps @ 1300 U.S. GPM each @ 68' TDH.

PRIMARY TREATMENT

Inlet Works

(5.45 MIGD) bar screens, 12" parshall flume, comminutor and by-pass.

Grit Removal

(5.45 MIGD) 1475 Cu. Ft. aerated grit tank (10'x10'x14.75' WD) equipped with air diffusion Equipment 50-100 SCFM.

SECONDARY TREATMENT

Aeration Tank:

(8.45 MIGD) Two 3: 450 Cu. Ft. (0.405 MIG total) tanks.
Contact Zone - 7390 Cu. Ft.
Reaeration Zone - 25064 Cu. Ft.
Aeration tanks are equipped with air diffusion equipment allowing 1325 SCFM per tank.
Contact Zone (22'x24'x14' D)
Reaeration Zone (74.66x24x14' D)

Air Supply

Three, identical, centrifugal air compressors 150 HP, 2710 CFM.

Final Clarifiers

Two, 65' diameter equipped with maximum sludge recirculation capacity 2.25 MIGD per tank. Scum baffle and removable rotating skimming device. Three, identical, horizontal, centrifugal, variable speed drive activated sludge return pumps @ 1050 IGPM @ 29' TDH. One scum pump @ 50 IGPM.

CHEMICAL TREATMENT

Phosphorous Removal

4000 IG chemical storage tank with two chemical metering pumps.

Chlorination

Two, 500 lb/day chlorinators. Chlorine contact chamber with two compartments, 3150 Cu. Ft. @ (25'x14'x9' D).

SLUDGE TREATMENT

Aerobic Digesters

Two tanks (98'x20'x14'D) 27,440 Cu. Ft. each. One equipped with air diffusion equipment allowing 1335 SCFM, and decanting device.

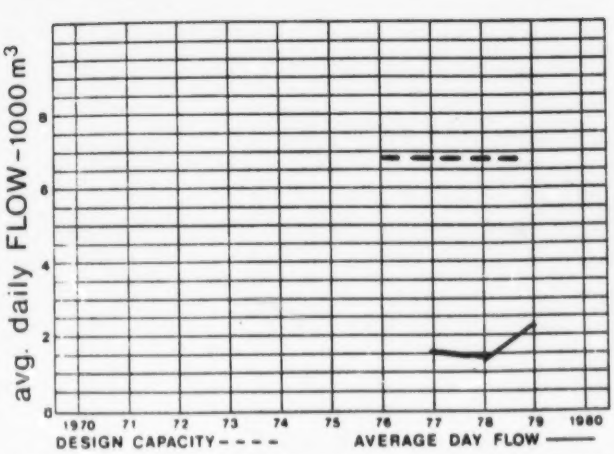
OUTLET WORKS

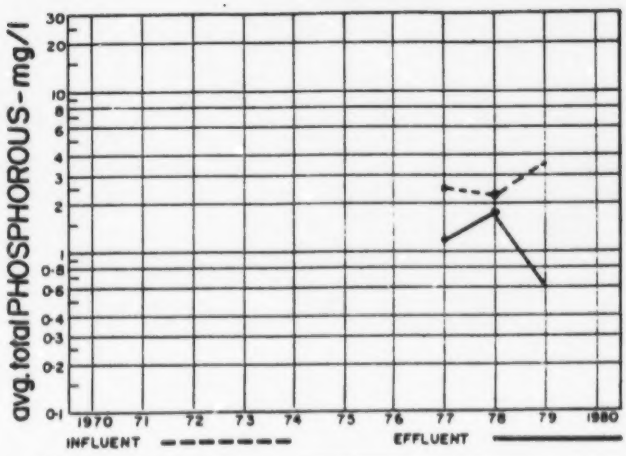
Bypass

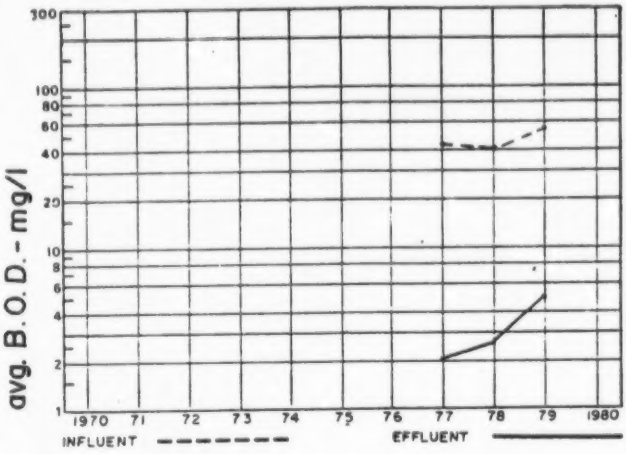
From start of influent works to a point just ahead of the effluent parshall flume.

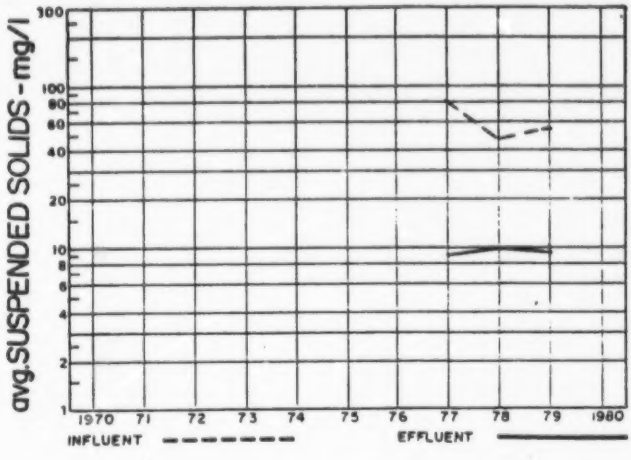
Outfall

To Lake St. Clair.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002078 BELLE RIVER WPCP

MUNICIPALITY : MAIDSTONE BELLE RIVER
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 11,500
POPULATION SERVED : 3,000
PERCENT SERVED : 26.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 8,818 1000 M3 DESIGN BODS : 300.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION				REDUCTION				REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	43.360	1.400	2.037	3.409	43.0	4.6	89	1.6	48.0	8.1	83	1.7	2.3	.9	59	.056
FEB	37.677	1.345	2.968	4.546	50.0	5.6	88	1.6	60.0	11.5	81	1.9	4.9	.6	87	.162
MAR	54.239	1.750	2.709	4.546	50.0	5.2	89	2.4	40.0	16.6	58	1.2	7.4	1.1	85	.342
APR	71.254	2.375	3.927	9.090	53.0	4.4	91	3.4	27.6	13.4	51	1.0	3.5	1.2	65	.164
MAY	82.590	2.660	4.000	8.000	73.8	8.9	87	5.3	117.0	8.4	92	8.9	4.8	.4	90	.358
JUN	81.480	2.718	3.100	3.640	94.8	10.0	89	6.9	63.7	8.9	85	4.4	5.2	.3	93	.398
JUL	91.340	2.940	6.360	6.360	59.7	7.8	86	4.7	47.5	5.2	88	3.8	2.7	.5	80	.198
AUG	73.180	2.360	3.020	3.180	66.8	10.0	85	4.1	55.1	8.3	84	3.4	2.4	*		
SEP	72.980	2.430	3.390	4.090	79.0	10.0	87	5.0	43.8	8.8	79	2.5	4.1	.4	89	.268
OCT	66.860	2.150	2.600	2.720	29.8	10.0	66	1.3	32.6	8.8	72	1.5	2.0	.6	67	.092
NOV	66.900	2.230	3.680	4.090	38.6	10.0	74	1.9	54.9	12.2	77	2.8	1.7	.5	68	.078
DEC	93.911	3.029	6.243	7.000	63.2	10.0	84	5.0	51.2	7.5	85	4.1	1.8	.2	85	.133
TOTAL	835.771							43.6				37.6				2.249
AVERAGE		2.282			58.4	8.0	86		53.4	9.8	81		3.5	.8	82	
MAXIMUM			6.360	9.090												
NO. OF SAMPLES					58	46			130	126			34	37		

DESIGN DATA - METRIC

MILDMAY

PROJECT: Mildmay

PROJECT NO.: 1-0119-67

TREATMENT: Extended Aeration

DESIGN FLOW: 0.96× $10^3 m^3$

DESIGN BOD:

SS:

SEWAGE PUMPING STATION
Type: Two centrifugal vertical dry pit raw sewage pumps
Size: 45.42 l/s @ 32.3m TDH
Power: 22.38 kW 3 speed (11.4-22.7-45.4 l/s) motor one kW standby diesel generator.

INLET WORKS
Type: One flowminutor with emergency bypass equipped with manually cleaned coarse bar screen.
Type: Twin grit channels
Size: 7.6m (L) x 0.5m (W)

AERATION TANK
Size: One 983 m^3 aeration tank in two compartments (242 m^2 x 4m swd)
Detention Time: 24 hrs. at DWF.
Maximum returnsludge 200% @ DWF

Final Clarifier
Size: One 13.49 diameter 3m swd circular clarifier. Effective surface area 122 m^2
Peak Rate: 32.3 m^3/m^2. min @ 3.932 $10^3 m^3/d$ Scum baffle, mechanical skimmer and air lift.

CHLORINE CONTACT CHAMBER
Size: 8.4m² x 3.4m swd
Detetnion time: 42 minutes
Type: One submersible chlorination water pump Rate: 0.631 l/s @ 25m TDH
Type: One chlorine residual analyser pump Rate: 0.631 l/s at 15m TDH
Type: One vertical turbine effluent waterpump
Rate: 2.209 l/s @ 37m TDH

SLUDGE HOLDING TANKS
Size: One 24m² x 4m swd
Detetnion time: 54 days
Air diffusers decanting device
One submersible sludge unloading pump rated at 29.5 l/s @ 12.2m TDH

BY-PASS
Size: 9m @ 254mm dia. sewer from exit of grit channels to outfall chamber.

OUTFALL SEWER
Size: 91.4m of 279.4mm O.D. polyethylene sewer discharging to Otter Creek.

BLOWER EQUIPMENT
Type: Three positive displacement blowers
Rate: 125.4 l/s @ 55.158 kPa
Speed: 840 r/min
Power: 15 kW, 1750 r/min motors

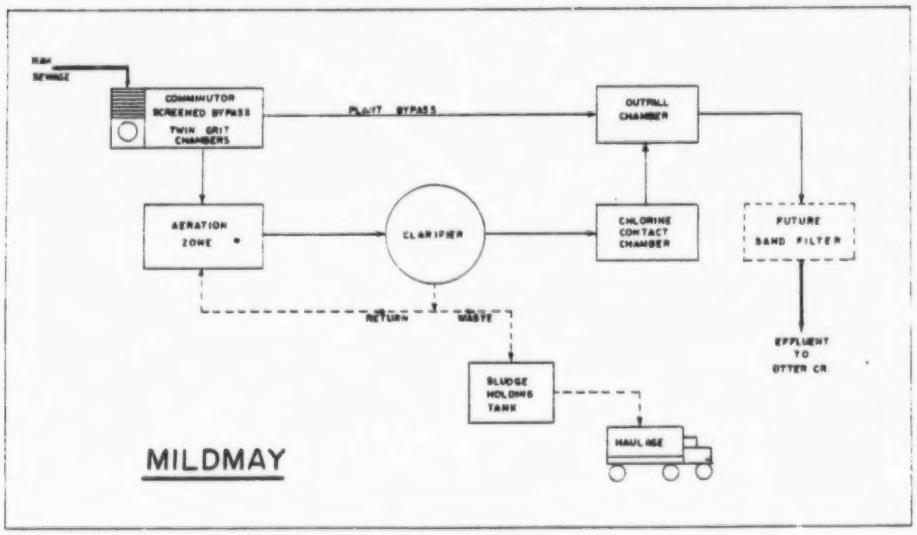
CHEMICAL FEED SYSTEM
(Phosphorus Removal)
Size: One 27.24 m^3 chemical storage tank for Alum, $FeCl_2$ or FeS_4
Pump Type: Two positive displacement chemical feed pumps
Rate: 0.019 l/s @ 827 kPa feeding to entry or exit of the aeration tank

CHLORINATION
Type: One v-notch gas chlorinator
Size: 45.36 kg/day
Type: One chlorine residual analyser

WELL
Size: One dia. well approx. 45.72m deep with a submersible pump
Rate: 1.893 l/s

STAND BY POWER
Type: One 75 kW, 93.75 kva diesel generator set with 0.908 m^3 fuel tank

MISCELLANEOUS
Type: One portable submersible sewage pump
Rate: 9.465 l/s @ 12.2 m TDH



DESIGN DATA - IMPERIAL

PROJECT : Mildmay
PROJECT NO. : 1-011-67
TREATMENT : Extended Aeration
DESIGN FLOW : 0.2125 MIGD

SEWAGE PUMPING STATION
Two centrifugal vertical dry pit raw sewage pumps each rated at 600 IGPM at 106 FT T.D.H. driven by a 30hp 3 speed (150-300-600 IGPM) motor
One 60 KW standby diesel generator.

INLET WORKS
One flowminutor with emergency bypass equipped with manually cleaned coarse bar screen.
Twin grit channels, each 25'Lx1.75'W.

AERATION TANK
One 34,000 FT^3 aeration tank in two compartments (2600 sq. ft.x 13ft.SWD)
24 hrs detention at DWF.
Max. return sludge 200% at DWF

FINAL CLARIFIER
One 44.25' diameter 10'SWD circular clarifier.
Effective surface area 1310 sq.ft. enuivalent to a peak loading rate rate of 660 IGPM/sq.ft., at 0.865 MIGD
Scum baffle, mechanical skimmer and air lift.

CHLORINE CONTACT CHAMBER
90 sq.ft.x11' SWD 42 minutes detention
One submersible chlorination water pump rated at 10 USGPM @ 95 T.D.H.
One chlorine residual analyser pump rated a 10USGPM @ 50 T.D.H.
One vertical turbine effluent water pump rated at 35 USGPM @ 122 T.D.H.

SLUDGE HOLDING TANK
One, 260 sq.ft.x13.0'SWD.
54 days detention.
Air diffusers decanting device
One submersible sludge unloading pump rated at 150 USGPM @ 40 T.D.H.

BYPASS
30' of 10" diam. sewer from exit of grit channels to outfall chamber

OUTFALL SEWER
305' of 11" O.D. polyethylene sewer discharging to Otter Creek.

BLOWER EQUIPMENT
Three positive displacement blowers each rated at 300 SCFM @ 8 PSIG, 840 RPM driven by 20hp,1750 RPM motors

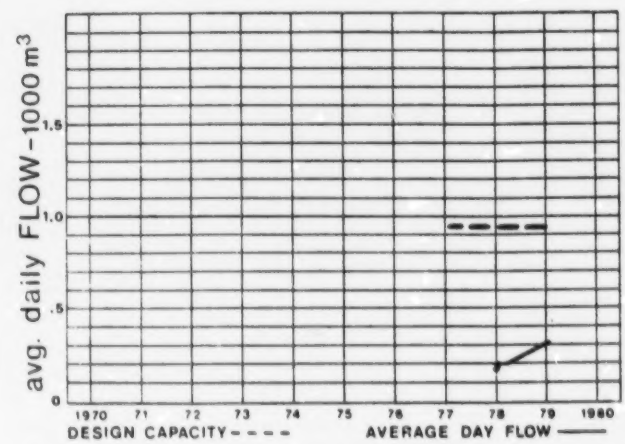
CHEMICAL FEED SYSTEM
(Phosphrous removal)
One 6000 IG chemical storage tank for Alum, $FeCl_2$ or $FeSO_4$
Two positive displacement chemical feed pumps ea rated at 15 IGPH @ 120 PSI feeding to entry or exit of the aeration tank

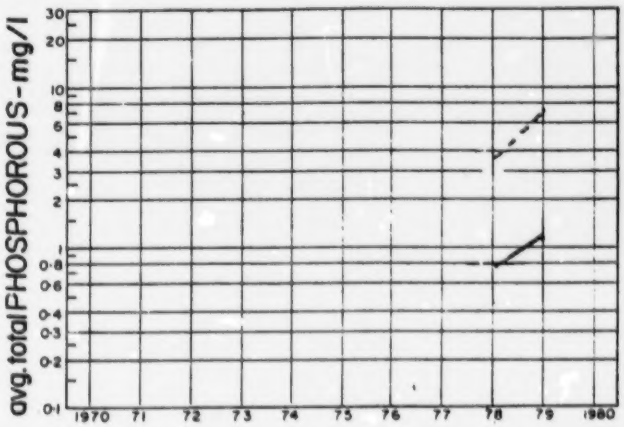
CHLORINATION
One v-notch gas chlorinator with a capacity of 100lb/day.
One chlorine residual analyser.

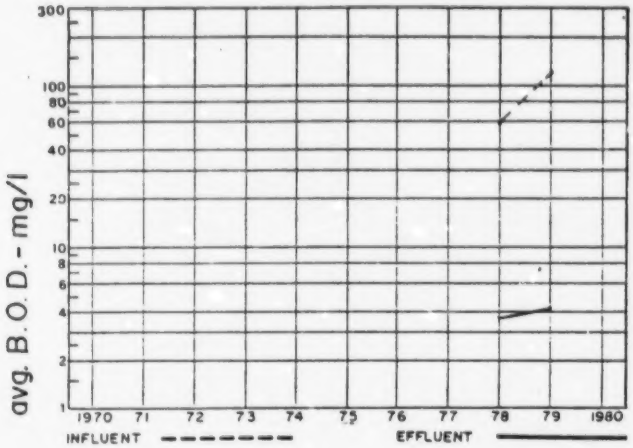
WELL
One 6" diam. well approx 150' deep with a 25 IGPM deep well submersible pump

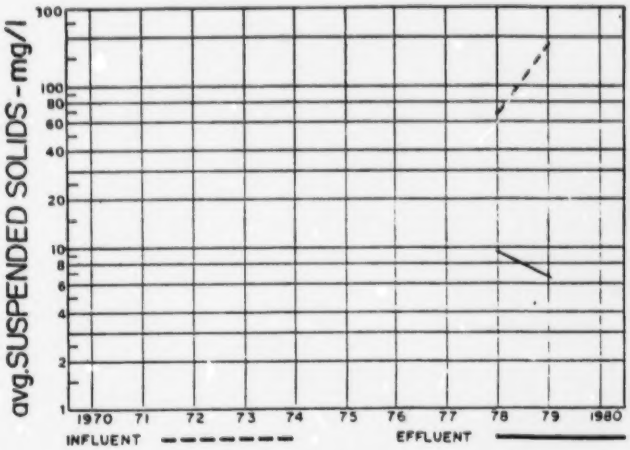
STANDBY POWER
One 75 KW.93.75 KVA diesel generator set with 200 IG fuel tank.

MISCELLANEOUS
One portable submersible sewage pump rated at 150 USGPM @ 40' T.D.H.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002194 MILDMAY WPCP

MUNICIPALITY : MILDMAY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 981
POPULATION SERVED : 953
PERCENT SERVED : 97.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.988 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	5.560	.179	.309		115.0	6.5	94	.6	114.0	19.3	83	.5	7.7	1.5	80	.034
FEB	5.196	.186	.277		66.0	4.2	93	.3	67.0	5.0	92	.3	4.5	2.0	55	.013
MAR	10.410	.336	.541		67.0	12.8	80	.5	68.0	5.5	91	.6	4.2	1.8	57	.025
APR	13.772	.459	.591		69.0	9.0	86	.8	72.7	8.8	87	.8	4.4	1.6	62	.038
MAY	8.740	.282	.518		220.5	2.4	98	1.9	323.0	4.0	98	2.7	9.1	.1	98	.079
JUN	6.133	.204	.303		250.0	1.6	99	1.5	411.0	4.9	98	2.4	15.7	.4	97	.094
JUL	6.915	.223	.374		104.0	3.1	97	.6	202.3	5.2	97	1.3	6.3	1.2	80	.035
AUG	8.116	.262	.453		175.0	1.0	99	1.4	368.0	5.0	98	2.9	5.8	.3	94	.044
SEP	7.947	.265	.386		114.0	3.2	97	.8	129.0	2.0	98	1.0	7.9	2.4	69	.044
OCT	18.091	.584	1.209		31.0	2.0	93	.5	28.0	7.0	75	.3	2.6	1.2	52	.025
NOV	8.910	.297	.297		108.0	2.6	97	.9	99.0	6.5	93	.8	6.6	.1	97	.057
DEC	10.498	.338	.637		136.0	1.9	98	1.4	148.0	5.2	96	1.4	8.5	.6	92	.082
TOTAL	110.288							11.6				15.6				.570
AVERAGE		.301			121.2	4.1	96		169.1	6.5	96		6.9	1.1	83	
MAXIMUM			1.209													
NO. OF SAMPLES					19	18			26	26			19	18		

DESIGN DATA - METRIC

PROJECT Moore Twp. (Corunna) WPCP

PROJECT NO. 2-0088-61

TREATMENT Extended Aeration

DESIGN FLOW 4.36 $10^3 m^3/d$

DESIGN POPULATION 4,000

BOD - Raw Sewage 150 mg/l
- Removal 90-95%

SS - Raw Sewage 150 mg/l
- Removal 90-95%

PRETREATMENT

Comminution

Type: Worthington comminutor
Size: One Model 15-C-4

Grit Removal

Type: C.P. Aer-Degritter with air lift
Size: 17.18 m^3
Retention: 17 min

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air, Single pass
Size: Two 25.6m x 5.18m x 4.34m (avg.)
Volume: 1154.68m^3
Retention: 24.0 hours

Air Supply

Type: Sutorbilt
Size: Two 417.9 l/s

Diffusers

Type: C.P. Spargers
Spacing: 22 per tank @ 508mm c-c

Secondary Sedimentation

Type: Dorr
Size: Two 6.71m x 3.71m x 3.81m (347.31m^3)
Retention: 5.7 hours
Loading: Surface, 16.13 $m^3/m^2 \cdot d$
Weir, 35.0 $m^3/m^2 \cdot d$

CHLORINATION

Type: W & T, Manual
Size: One 45.36 kg/d

Chlorine Contact Chamber

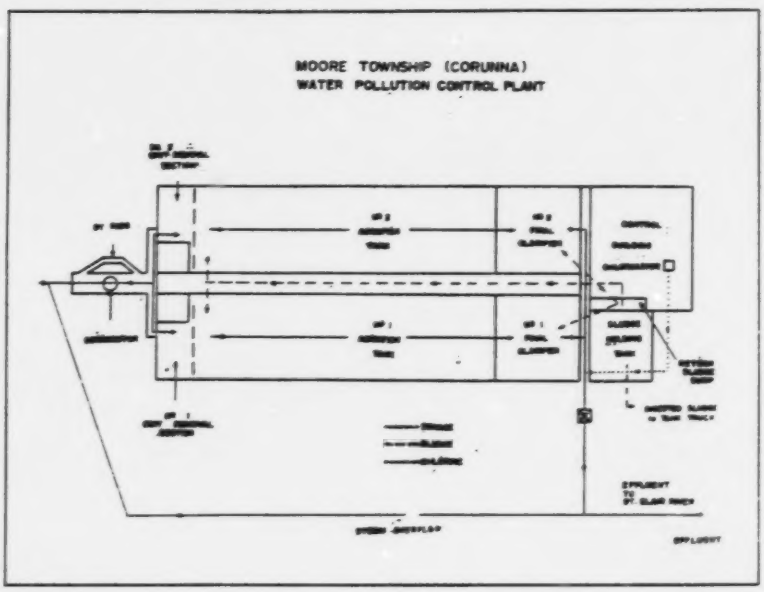
- in outfall

OUTFALL

59.74m of 1219m dia corrugated pipe to St. Clair River

SLUDGE HANDLING

Type: Sludge holding tank (decanted)
Size: One 5.18m x 5.18m x 4.57m (104.56m^3 at 3.90m depth)



DESIGN DATA - IMPERIAL

PROJECT Moore Twp. (Corunna) WPCP

PROJECT NO. 2-0088-61

TREATMENT Extended Aeration

DESIGN FLOW 0.96 mgd

DESIGN POPULATION 4,000

BOD - Raw Sewage 150 mg/l
- Removal 90-95%

SS - Raw Sewage 150 mg/l
- Removal 90-95%

PRETREATMENT

Comminution

Type: Worthington comminutor
Size: One Model 15-C-4

Grit Removal

Type: C.P. Aer-Degritter with air lift
Size: 3780 gal
Retention: 17 min

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air, Single pass
Size: Two 84' x 17' x 14.25' (avg)
(40,698 cu ft or 304,900 gal)
Retention: 24.0 hours

Air Supply

Type: Sutorbilt
Size: Two 1000 cfm

Diffusers

Type: C.P. Spargers
Spacing: 22 per tank @ 20" c-c

Secondary Sedimentation

Type: Dorr
Size: Two 22' x 22' x 12½' swd
(75,300 gal)
Retention: 5.7 hours
Loading: Surface, 330 gal/ft^2/day
Weir, 2,350 gal/ft/day

CHLORINATION

Type: W & T, Manual
Size: One 100 lb/day

Chlorine Contact Chamber

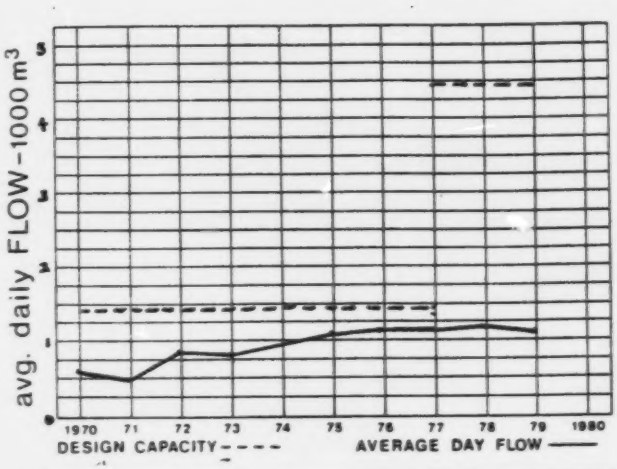
- in outfall

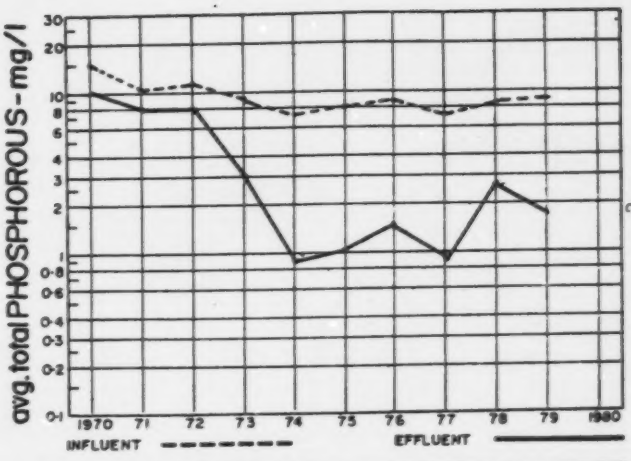
OUTFALL

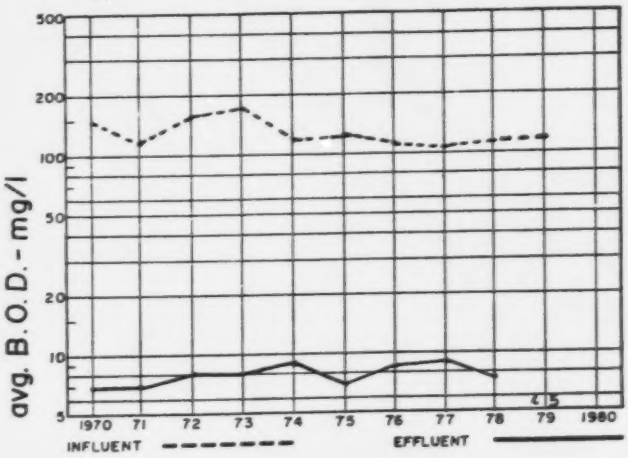
190' of 48" dia corrugated pipe to St. Clair River

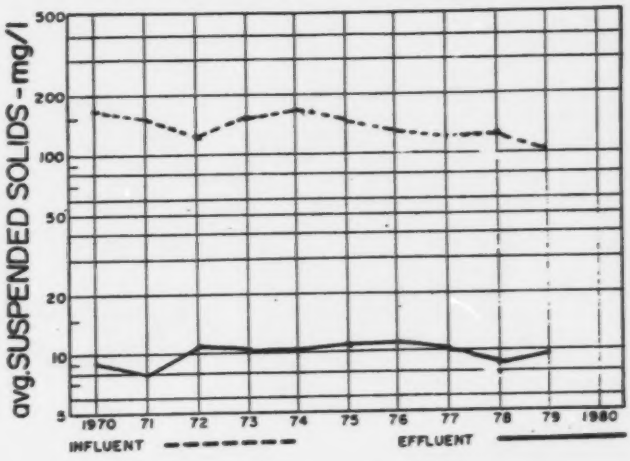
SLUDGE HANDLING

Type: Sludge holding tank (decanted)
Size: One 17' x 17' x 13' (23,000 gal @ 12.8' depth)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000481 CORUNNA P.V. PLANT EXP TO .990 MG 78

MUNICIPALITY : MOORE (CORUNNA)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION - PHOSPHORUS REMOVAL

CURRENT POPULATION : 9,591
POPULATION SERVED : 5,100
PERCENT SERVED : 53.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.364 1000 M3 DESIGN BOD5 : 150.0 MG/L DESIGN SUSP.SOLIDS : 150.0 MG/L

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	41.414	1.336	1.759	2.387	130.0	3.6	97	5.2	122.0	10.5	91	4.6	7.5	.6	92	.286
FEB	34.836	1.244	1.837	2.273	150.0	6.0	96	5.0	181.0	7.0	95	5.3	10.5	2.0	80	.298
MAR	52.647	1.698	3.396	3.750	112.0	4.8	95	5.6	152.0	.9	99	7.9	7.1	1.0	85	.321
APR	63.458	2.115	4.381	2.228	118.0	3.0	97	7.2	97.0	8.5	91	5.6	7.1	1.0	85	.387
MAY	47.418	1.529	2.611	2.318	104.0	5.2	95	4.6	73.0	15.2	79	2.7	8.8	1.5	82	.345
JUN	41.011	1.367	1.765	3.272	126.0	3.4	97	5.1	93.0	11.5	87	3.3	9.3	.3	95	.368
JUL	41.617	1.342	1.745	3.545	60.0	3.0	95	2.3	75.0	5.0	93	2.9	13.2	.5	95	.525
AUG	41.385	1.335	2.045	2.659	52.0	2.0	96	2.0	64.0	22.5	64	1.7	4.8	1.6	66	.131
SEP	37.209	1.240	1.568	2.396	130.0	2.0	98	4.7	84.0	13.0	85	2.6	8.7	1.8	79	.257
OCT	37.334	1.204	1.891	2.386	175.0	3.2	98	6.4	113.0	9.5	91	3.8	9.8	6.8	30	.112
NOV	41.112	1.370	1.977	2.931	132.0	3.6	97	5.2	107.0	9.0	91	4.0	8.3	2.2	72	.349
DEC	48.878	1.576	3.675	4.092	62.0	3.4	94	2.8	75.0	8.0	89	3.2	5.3	1.5	70	.184
TOTAL	528.319							55.7				48.1				3.499
AVERAGE		1.446			112.7	3.8	96		101.3	9.9	90		8.3	1.7	78	
MAXIMUM			4.381	4.092												
NO. OF SAMPLES					12	12			12	12			12	12		

DESIGN DATA - METRIC

MOORE (COURTRIGHT)

PROJECT: Village of Courtright WPCP

PROJECT NO: 1-0157-62

TREATMENT: Extended Aeration

DESIGN FLOW: 0.546 $10^3 m^3/d$

PRIMARY TREATMENT

Screening

38.1 mm x 38.1 mm bars at 50.8 mm c/c

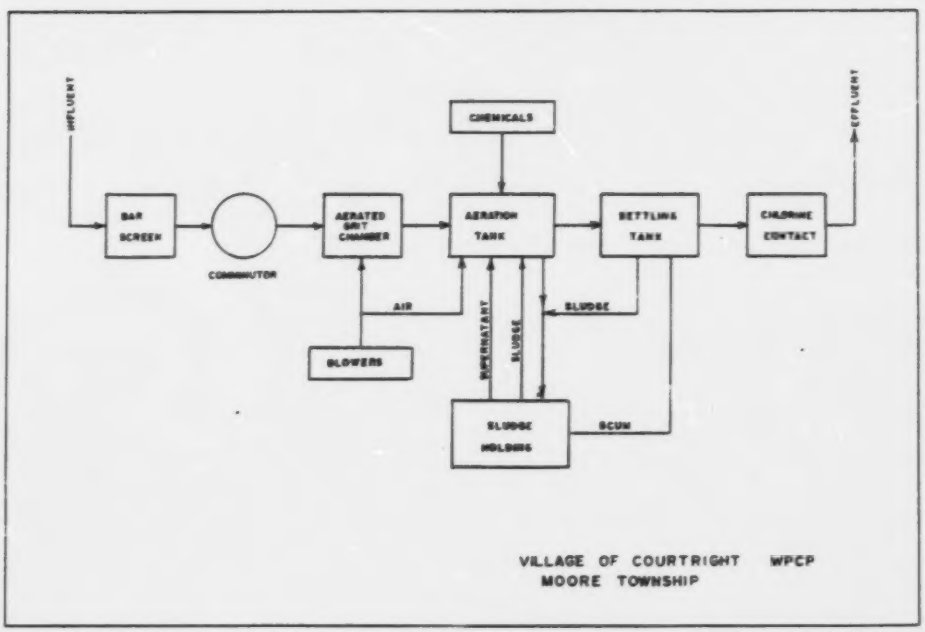
SECONDARY TREATMENT

Aeration Tanks

Volume: 0.55 $10^3 m^3$

PUMPING STATION

2 submersible pumps plus one standby.
Any two rated at 1750.21 $10^3 m^3$.



DESIGN DATA - IMPERIAL

PROJECT Village of Courtright WPCP

PROJECT NO. 1-0157-62

TREATMENT Extended Aeration

DESIGN FLOW .120 MIGD

PRIMARY TREATMENT

Screening

1½" x ½" bars @ 2" c/c

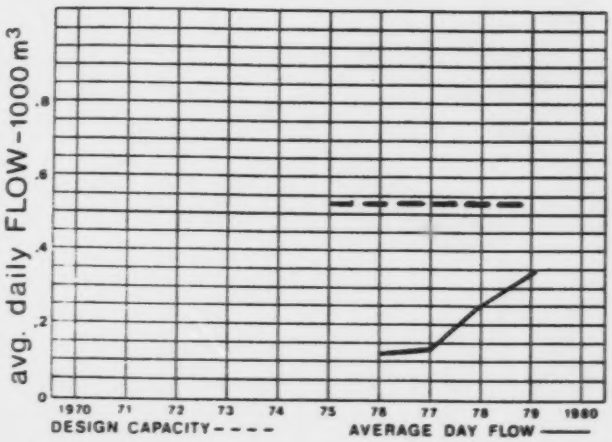
SECONDARY TREATMENT

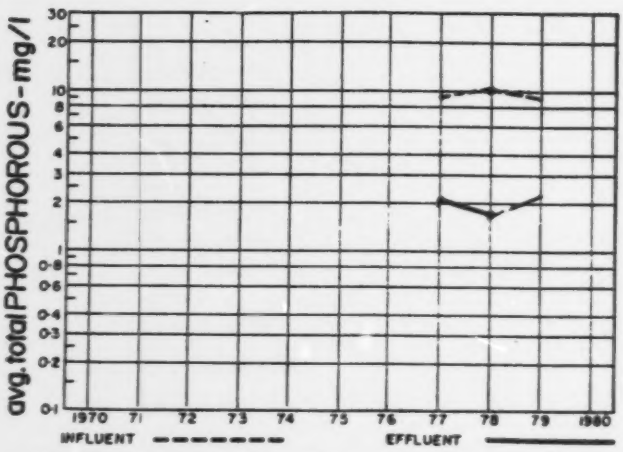
Aeration Tanks

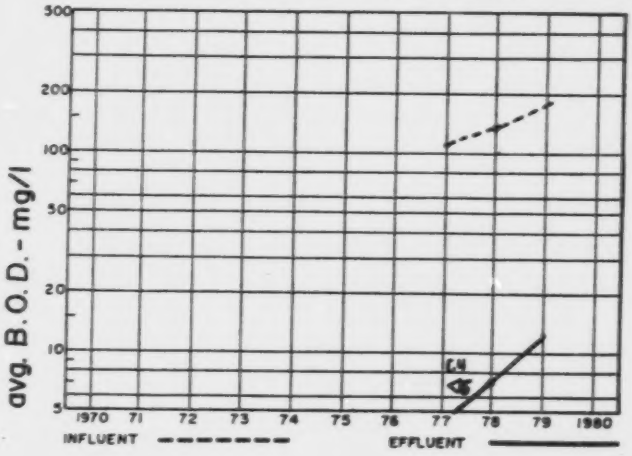
Volume: 0.12 mg

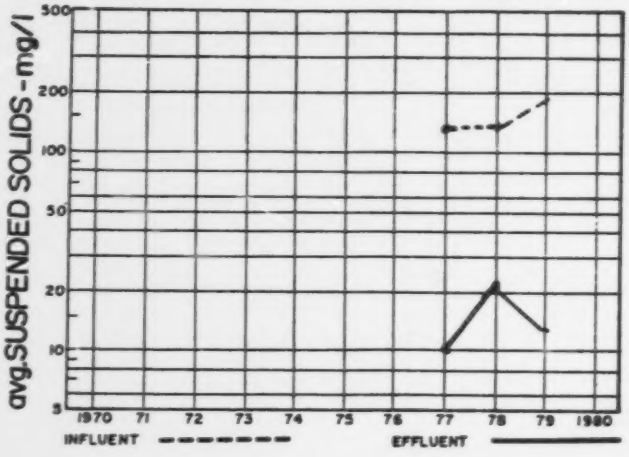
PUMPING STATION

2 submersible pumps plus one standby.
Any two rated at 385 IGPM.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001818 COURTRIGHT W P C P

MUNICIPALITY : MOORE (COURTRIGHT)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 9,591
POPULATION SERVED : 980
PERCENT SERVED : 10.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.548 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	8.383	.270	.396		150.0	15.2	89	1.1	118.0	28.0	75	.7	8.4	1.8	78	.055
FEB	7.201	.257	.532		200.0	18.8	91	1.3	132.0	23.0	82	.7	12.0	6.0	50	.043
MAR	10.988	.354	.782		114.0	13.2	88	1.1	141.0	24.0	82	1.2	7.5	*		
APR	15.326	.510	.815		124.0	9.8	92	1.7	108.0	12.0	88	1.4	5.5	.8	85	.072
MAY	14.086	.454	1.263		125.0	2.4	98	1.7	87.0	9.0	86	.8	8.2	1.0	87	.101
JUN	9.745	.324	.401		46.0	8.0	86	.3	42.0	15.0	64	.2	4.9	2.9	40	.019
JUL	9.967	.322	.418		88.0	6.0	93	.6	96.0	2.0	97	.9	7.6	1.1	85	.069
AUG	12.139	.391	.379		96.0	64.0	33	.3	115.0	1.0	99	1.3	7.7	.9	87	.082
SEP	9.362	.312	.397		170.0	4.0	97	1.5	90.0	11.5	87	.7	11.5	4.0	65	.070
OCT	9.682	.311	.379		225.0	5.4	97	2.1	91.0	14.0	84	.7	10.6	3.5	66	.069
NOV	10.562	.352	.575		*	*			*	*			*	*		
DEC	12.473	.402	1.883		670.0	5.6	99	8.2	1146.0	8.5	99	14.1	28.0	1.8	93	.304
TOTAL	129.894							20.5				23.3				.880
AVERAGE		.355			182.5	13.4	92		194.9	13.4	93		9.9	2.3	76	
MAXIMUM			1.883													
NO. OF SAMPLES					11	11			11	10			11	10		

DESIGN DATA - METRIC

WESTMINSTER

PROJECT Westminster Twp. WPCP

PROJECT NO. 2-0033-59

TREATMENT Extended Aeration

DESIGN FLOW 1.137 $10^3 m^3/d$

DESIGN POPULATION 5,000

RAW SEWAGE PUMPS

Make: Chicago Pump
#1 - 7.57 l/s at 7.0 TDH
Type: 1.2m x 1.2m, 1.5 kW electric
#2 - 7.57 l/s at 7.0m TDH
Type: 1.2m x 1.2m, 1.5 kW
with standby Wisconsin
THD size 1.0m x 1.0m gasoline engine
#3 - 18.9 l/s x 6.1m TDH
Type: LMC4, 2.23 kPa

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air: single-pass
Size: Two 16.5m x 8.2m x 4.3m ($1145.6m^2$)
Retention: 24.2 hr.

Diffusers

- Discfusers on swing arm

Air Supply

Type: Sutorbilt
Size: Three 140.8 l/s at 48.26 kPa

Secondary Sedimentation

Type: Link-Belt
Size: Two 16.5m x 2.4m x 2.8m
Volume: $228.21m^3$
Retention: 4.80 hr.
Loading: Surface, $28.36 m^3/m^2 \cdot d$
Weir, $29.13 m^3/m \cdot d$

CHLORINATION

Type: W & T
Size: One 45.36 Kg/d

Chlorine Contact Chamber

Size: One 3.05m x 2.1m x 2.7m
Volume: $17.87 m^3$
Retention: 22.7 min.

OUTFALL

- to Dingman Creek

TERTIARY TREATMENT

Effluent Sand Filters

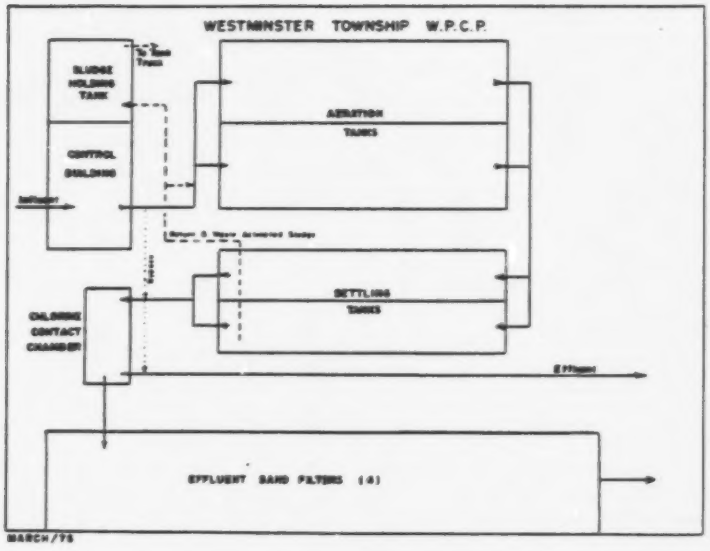
Size: Four units ($2099 m^2$ or 0.25 ha)

Depth: 762mm of sand (min)
Capacity: 0.745 $10^3 m^3$/ha/day

SLUDGE HANDLING

Sludge Holding Tank

Size: $126 m^3$



MARCH/75

DESIGN DATA - IMPERIAL

PROJECT Westminster Twp. WPCP

PROJECT NO. 2-0033-59

TREATMENT Extended Aeration

DESIGN FLOW 0.25 mgd

DESIGN POPULATION 5,000

RAW SEWAGE PUMPS

Make: Chicago Pump
#1 - 100 gpm @ 23' tdh
Type: 4x4, 2hp electric
#2 - 100 gpm @ 23' tdh
Type: 4x4, 2hp electric
with standby Wisconsin
THD size 3½ x 3½ gasoline engine
#3 - 250 gpm x 20' tdh
Type: LMC4, 3 hp electric

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air; single-pass
Size: Two 54' x 27' x 14' (252,000 gal)
Retention: 24.2 hr

Diffusers

- Discfusers on swing arm

Air Supply

Type: Sutorbilt
Size: Three 337 scfm @ 7 psi

Secondary Sedimentation

Type: Link-Belt
Size: Two 54' x 8' x 9.25' (60,200 gal)
Retention: 4.80 hr
Loading: Surface, 580 gal/ft^2/day
Weir, 1955 gal/ft/day

CHLORINATION

Type: W & T
Size: One 100 lb/day

Chlorine Contact Chamber

Size: One 10' x 7' x 9' (3930 gal)
Retention: 23.7 min

OUTFALL

- to Dingman Creek

TERTIARY TREATMENT

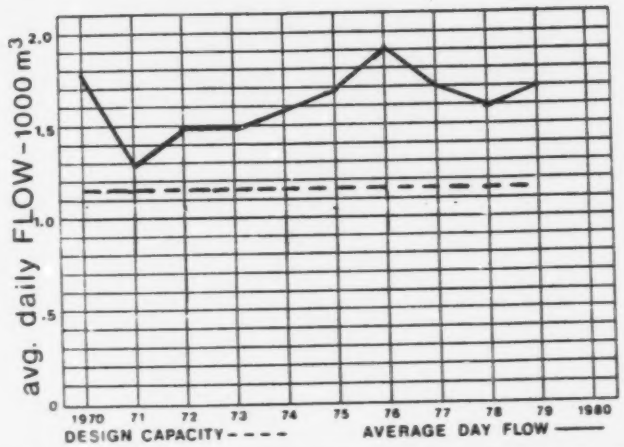
Effluent Sand Filters

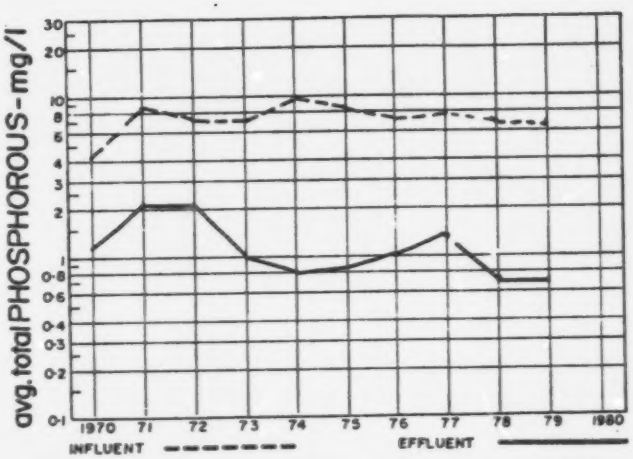
Size: Four units (26,900 sq ft or 0.62 acres)
Depth: 30" of sand (min)
Capacity: .405 mil gal/acre/day

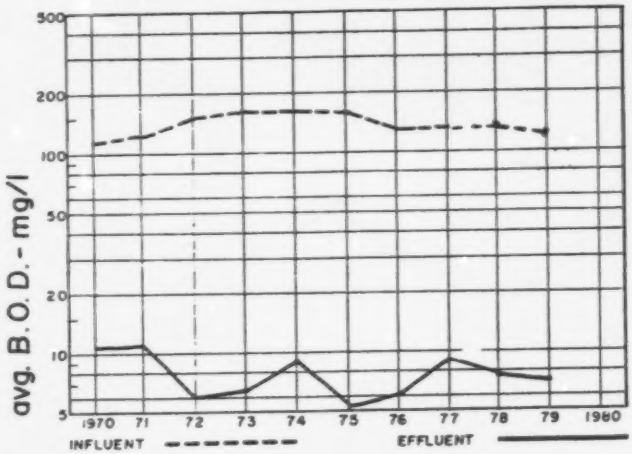
SLUDGE HANDLING

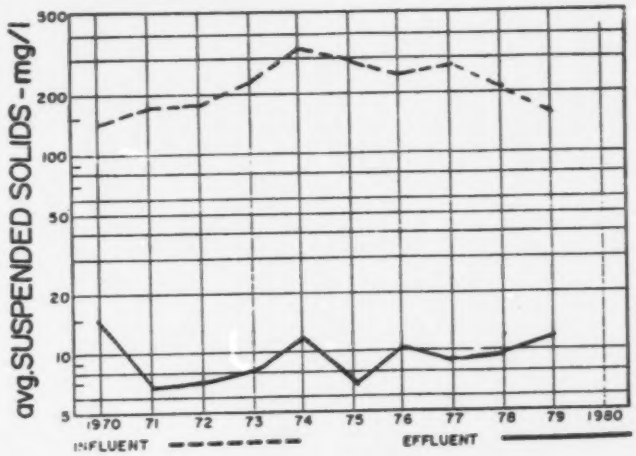
Sludge Holding Tank

Size: 4,440 cu ft or 27,830 gal









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000800 WESTMINSTER WPCP

MUNICIPALITY : WESTMINSTER TWP
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 6,267
POPULATION SERVED :
PERCENT SERVED :

* DATA NOT AVAILABLE

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.136 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	54.168	1.747	3.173		136.0	28.0	79	5.8	199.0	34.0	82	8.9	7.5	1.1	85	.347
FEB	42.019	1.501	2.614		150.0	10.0	93	5.8	233.0	26.0	88	8.6	8.5	1.3	84	.303
MAR	67.558	2.179	3.050		97.0	5.6	94	6.1	147.0	11.0	92	9.1	5.8	.6	89	.351
APR	70.110	2.337	3.309		92.0	8.2	91	5.8	135.0	10.0	92	8.7	4.3	.5	88	.261
MAY	53.014	1.710	2.464		175.0	8.8	94	8.8	118.0	11.5	90	5.6	6.8	.9	86	.313
JUN	43.637	1.454	1.859		220.0	6.8	96	9.3	167.5	14.3	91	6.6	7.3	.8	88	.383
JUL	43.337	1.398	1.718		110.0	1.6	98	4.6	243.0	8.0	96	10.1	6.5	.6	90	.256
AUG	52.124	1.681	2.482		139.0	1.3	99	7.1	185.0	2.8	98	8.4	6.4	.6	90	.301
SEP	43.874	1.462	2.227		*	*			*	*			*	*		
OCT	48.673	1.473	1.818		125.0	2.4	98	5.6	154.5	8.8	94	6.6	7.4	.6	91	.311
NOV	54.269	1.809	2.691		98.0	.2	99	5.3	133.0	4.5	96	6.9	4.9	.8	87	.233
DEC	54.909	1.771	2.982		*	*			*	*			*	*		
TOTAL	624.690							64.6				80.1				2.989
AVERAGE		1.710			134.2	7.2	94		169.5	13.0	92		6.8	.7	88	
MAXIMUM			3.309													
NO. OF SAMPLES					17	15			17	15			17	15		

Ministry of the Environment
Ontario

West Central Region

②

REGIONAL OFFICE

STONEY CREEK
140 Centennial Pkwy. N.
416-561-7410

DISTRICT OFFICES

Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

West Central Region

Ministry of the Environment

Ontario

DESIGN DATA - METRIC

ELORA

PROJECT: Village of Elora WPCP

PROJECT NO.: 2-0125-62

TREATMENT: Extended Aeration

DESIGN FLOW: 0.377 $10^3 m^3/d$

DESIGN POPULATION 1,000

BOD - Raw Sewage 210 mg/l

SS - Raw Sewage 250 mg/l

PRETREATMENT

Screening (at pumping station)

- Two coarse bar screens

Pumps - Robert Morse

- Two 22.71 l/s (electric)
  @ 14.3m TDH

Grit Removal

Type: Grit channels
Size: Two 3.05m x 0.6m

SECONDARY TREATMENT

Aeration Tanks

Type: Single-pass
Size: Two 9.8m x 6.1m x 3.4m
(399.312 m^3)
Retention: 25.4 hr.

Air Supply

Type: Sutorbilt: variable speed pulley
Size: Two 76.5 - 15.5 l/s

Diffusers

Type: Spargers
Size: 16 per tank @ 0.6m centres

Secondary Sedimentation

Type: Walker Process
Size: Two 7.9m x 1.8m x 2.4m deep (34.10m^3)
Retention: 4.3 hr.
Loading: Surface, 13.0 m^3/m^2-d
Weir, 22.35 m^3/m-d

CHLORINATION

Type: Wallace & Tiernan V-100

Chlorine Contact Chamber

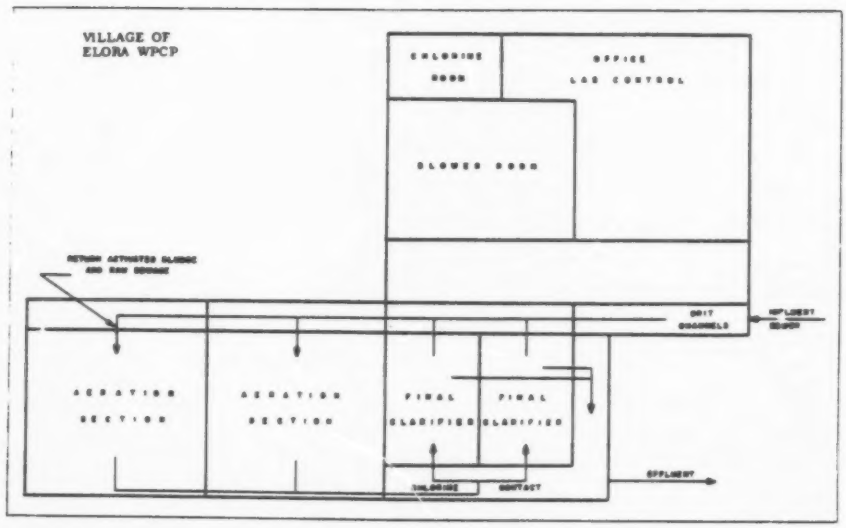
Size: 4.0m x 1.5m x 1.8m deep (9.91m^3)
Retention: 37.7 min.

OUTFALL

- dia pipe to Grand River

SLUDGE HANDLING

Type: Thickening tank
Size: 8.2m x 6.3m x 3.6m (avg) (2057.40m^3)



DESIGN DATA - IMPERIAL

PROJECT Village of Elora WPCP

PROJECT NO.	2-0125-62
TREATMENT	Extended Aeration
DESIGN FLOW	0.083 mgd
DESIGN POPULATION	1,000
BOD - Raw Sewage	210 mg/l
SS - Raw Sewage	250 mg/l

PRETREATMENT

Screening (at pumping station)

- Two coarse bar screens

Pumps - Robert Morse

- Two 300 gpm (electric) @ 47' tdh

Grit Removal

Type: Grit channels
Size: Two 10' x 2'

SECONDARY TREATMENT

Aeration Tanks

Type: Single-pass
Size: Two 32' x 20' x 11' (14,100 cu ft or 87,800 gal)
Retention: 25.4 hr

Air Supply

Type: Sutorbilt: variable speed pulley
Size: Two 183-370 rpm each

Diffusers

Type: Spargers
Size: 16 per tank @ 2' centres

Secondary Sedimentation

Type: Walker Process
Size: Two 26' x 6' x 7'9" deep (7,800 gal)
Retention: 4.3 hr
Loading: Surface, 266 gal/ft^2/day
Weir, 1,800 gal/ft/day

CHLORINATION

Type: Wallace & Tiernan V-100

Chlorine Contact Chamber

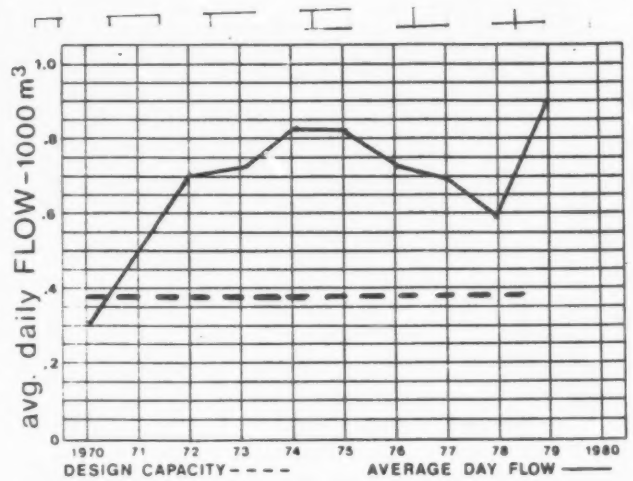
Size: 13' x 5' x 6' deep (2,180 gal)
Retention: 37.7 min

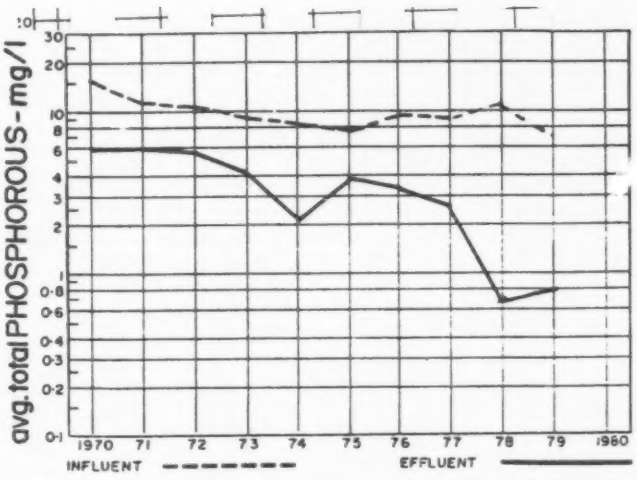
OUTFALL

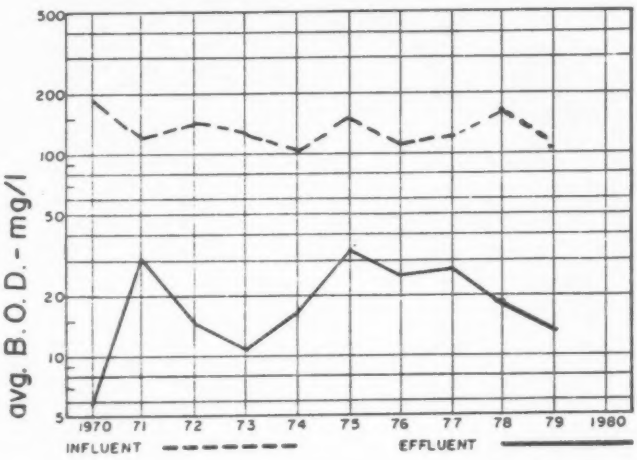
- 12" dia pipe to Grand River

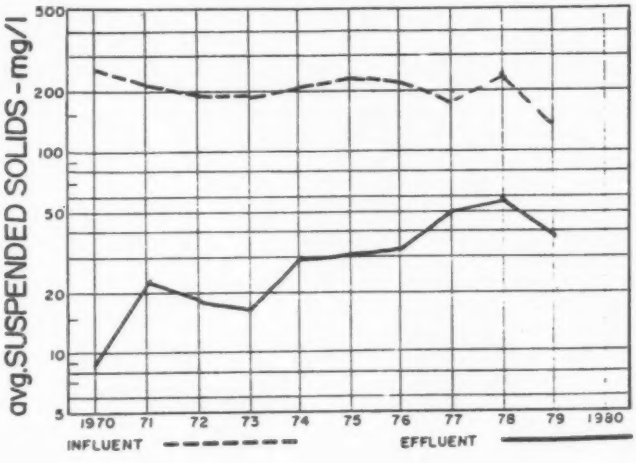
SLUDGE HANDLING

Type: Thickening tank
Size: 27' x 20' 8" x 11' 9" (avg)
(8,750 cu ft or 42,000 gal)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000178 ELORA W P C P

MUNICIPALITY : ELORA
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABILIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,476
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.377 1000 M3 DESIGN BOD5 : 210.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION				REDUCTION				REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/78-DEC/78																
JAN	24.394	.787	1.123	1.364	130.0	12.0	90	2.8	158.0	30.3	80	3.1	5.6	.9	83	.115
FEB	20.898	.746	.932	1.364	95.0	9.0	90	1.7	105.0	27.0	74	1.6	4.8	.9	81	.082
MAR	44.460	1.434	2.309	1.364	82.0	7.0	91	3.3	115.0	43.5	62	3.1	5.0	.8	84	.187
APR	43.665	1.455	1.811	1.365	130.0	5.0	96	5.4	140.0	35.0	75	4.5	6.8	.8	87	.261
MAY	33.862	1.092	1.560	1.365	88.0	8.2	90	2.7	127.5	34.6	72	3.1	7.2	.8	87	.214
JUN	25.533	.851	1.020	1.365	95.0	13.0	86	2.0	150.0	31.5	79	3.0	6.6	.9	86	.146
JUL	22.852	.737	1.046	1.365	105.0	18.0	82	1.9	120.0	25.0	79	2.1	7.6	.6	91	.159
AUG	22.350	.730	.930	1.400	202.5	13.0	93	4.2	157.5	38.5	76	2.7	8.5	.7	91	.174
SEP	21.720	.724	1.110	1.400	115.0	14.0	87	2.1	135.0	37.5	72	2.1	6.2	.7	87	.118
OCT	23.290	.751	.880	1.400	105.0	30.0	71	1.7	145.0	93.0	63	2.1	6.8	1.1	83	.133
NOV	24.550	.818	.980	1.400	105.0	36.0	65	1.6	135.0	69.0	48	1.6	10.0	1.1	89	.218
DEC	28.680	.925	1.500	1.400	118.0	8.5	92	3.1	235.0	51.8	77	5.2	8.8	.7	91	.230
TOTAL	336.254							33.2				34.6				2.037
AVERAGE		.920			114.2	14.4	87		143.5	39.5	72		6.9	.8	87	
MAXIMUM			2.309	1.400												
NO. OF SAMPLES					15	14			15	189			15	238		

DESIGN DATA - METRIC

PARIS

PROJECT: Town of Paris WPCP

PROJECT NO.: 2-0034-59

TREATMENT: Extended Aeration

DESIGN FLOW: 2.27 $10^3 m^3/d$

DESIGN POPULATION: 3,600

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 170 mg/l

PRETREATMENT

Grit Removal

Type: Channel: manually cleaned
Size: Two 7.6m x .8m x .8m

Comminution

Type: Jones & Atwood (1)

RAW SEWAGE PUMP

Type: Worthington
Size: Two 25.36 l/s @ 3.7m TDH

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical: single-pass
Size: Two 29.2m : 9.8m x 3.05m
Retention: 17.9 hr.
Volume: 1691.1 m^3

Aerators

- Ames Crosta (6)

Secondary Sedimentation

Type: Dorr
Size: Two 11.0m x 11.0 x 2.7m swd
Volume: 659.17 m^3
Retention: 3.5 hr.
Loading: Surface, 9.44 $m^3/m^2 \cdot d$
Weir, 25.87 $m^3/m \cdot d$

CHLORINATION

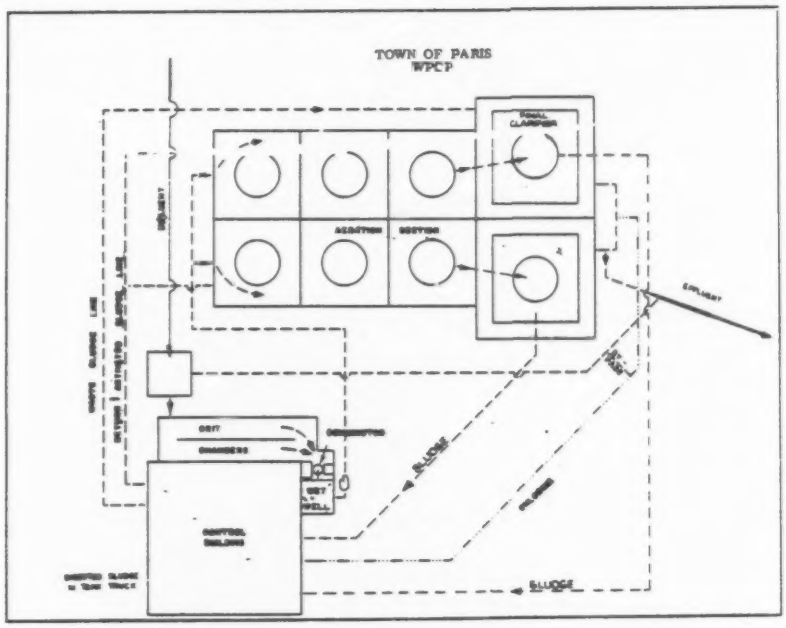
Type: W & T
Size: One 181 kg/day

Chlorine Contact Chamber

- in outfall

OUTFALL

- to Grand River



DESIGN DATA - IMPERIAL

PROJECT NO. 2-0034-59

TREATMENT Extended Aeration

DESIGN FLOW 0.50 mgd

DESIGN POPULATION 3,600

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 170 mg/l

PRETREATMENT

Grit Removal

Type: Channel: manually cleaned
Size: Two 25 X 2½ X 2½'

Comminution

Type: Jones & Atwood (1)

RAW SEWAGE PUMP

Type: Worthington
Size: Two 335 gpm @ 12' tdh

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical: single-pass
Size: Two 96 X 32 X 10' (372,000 gal)
Retention: 17.9 hr

Aerators

- Ames Crosta (6)

Secondary Sedimentation

Type: Dorr
Size: Two 36 X 36 X 9' swd
(145,000 gal)
Retention: 3.5 hr
Loading: Surface, 193 $gal/ft^2/day$
Weir, 1736 gal/ft/day

CHLORINATION

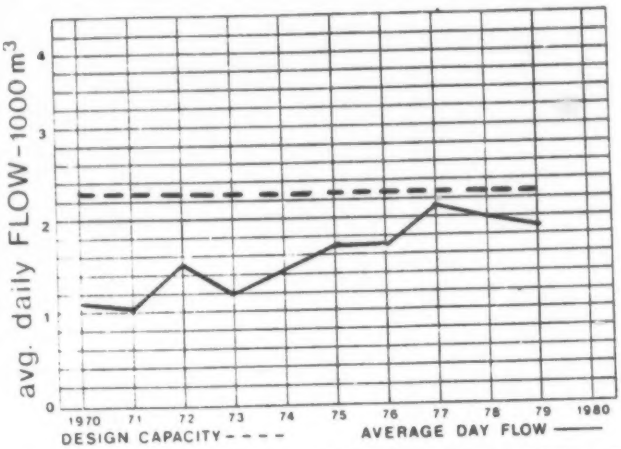
Type: W & T
Size: One 400 lb/day

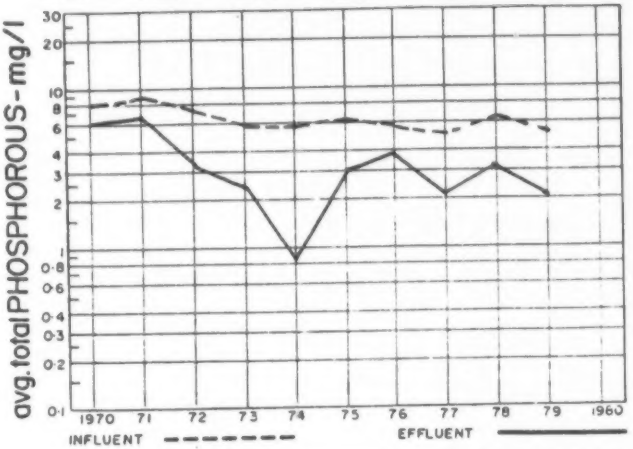
Chlorine Contact Chamber

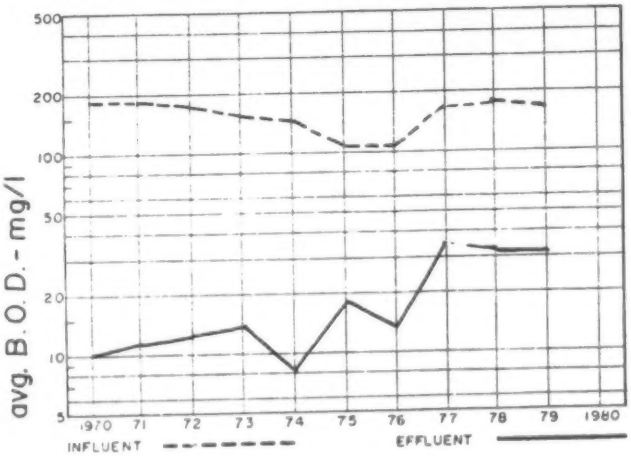
- in outfall

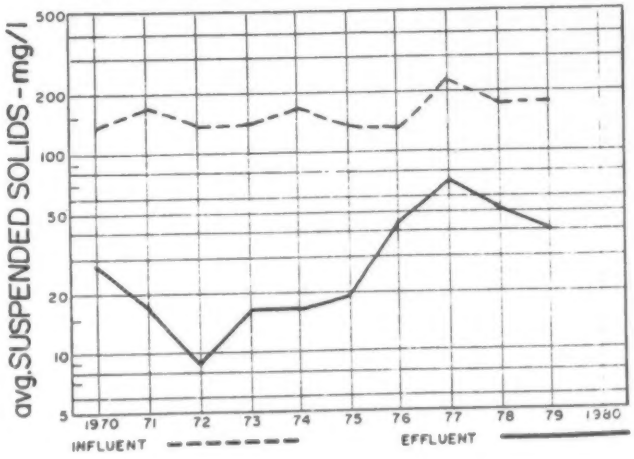
OUTFALL

- to Grand River









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001097 PARIS WPCP

MUNICIPALITY : PARIS
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 7,048
POPULATION SERVED : 5,000
PERCENT SERVED : 70 9

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.273 1000 M3 DESIGN BODS : 200.0 MG/L DESIGN SUSP.SOLIDS : 170.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	73.309	2.365	3.400	4.455	112.0	19.1	82	6.8	121.0	42.0	65	5.7	5.5	2.6	52	.213
FEB	63.644	2.273	3.009	4.455	162.0	31.2	80	8.3	114.0	42.0	63	4.5	6.1	2.7	55	.216
MAR	74.895	2.416	3.596	4.546	135.0	47.0	65	6.5	169.0	41.0	75	9.5	3.8	.9	76	.217
APR	52.770	2.200	3.750	4.540	172.0	68.3	60	5.4	144.0	63.3	56	4.2	3.1	1.0	65	108
MAY	58.200	1.800	2.500	4.500	103.4	38.8	62	3.7	132.8	39.1	70	5.4	3.2	1.7	45	.087
JUN	48.500	1.610	2.040	3.360	166.2	29.0	82	6.6	165.2	35.1	78	6.3	6.2	1.9	69	.209
JUL	59.000	1.900	2.380	4.460	136.2	24.4	82	6.5	184.4	42.0	77	8.4	6.6	3.0	54	.215
AUG	41.480	1.340	4.540		193.0	37.7	80	6.4	187.0	24.0	87	6.7	6.6	1.9	71	199
SEP	47.605	1.586	2.200	4.460	171.6	34.0	80	6.5	207.2	51.0	75	7.4	7.1	2.1	70	.238
OCT	52.610	1.690	2.220	4.460	185.3	22.3	87	8.5	208.4	25.2	87	9.6	6.0	2.5	57	.184
NOV	57.320	1.910	2.690	4.460	163.5	21.7	86	8.1	209.0	30.5	85	10.2	6.0	2.6	55	194
DEC	61.100	1.890	3.070	4.460	168.2	27.2	83	8.6	130.7	45.2	65	5.2	5.8	3.6	38	.136
TOTAL	690.433							82.5				83.6				2.216
AVERAGE		1.915			155.7	33.3	78		164.3	40.0	75		5.5	2.2	59	
MAXIMUM			4.540	4.546												
NO. OF SAMPLES					36	34			36	35			37	35		

DESIGN DATA - METRIC

WELLESLEY

PROJECT: Wellesley Twp. WPCP

PROJECT NO.: 1-0343-68

TREATMENT: Contact Stabilization plant operated as Extended Aeration

DESIGN FLOW: 0.5 x $10^3 m^3/d$

BOD - Raw Sewage 200 mg/l
- Removal 93%

SS - Raw Sewage 250 mg/l
- Removal 94%

RAW SEWAGE PUMPS
Size: Two, each 20.19 l/s @ 8.23m TDH

GRIT REMOVAL FACILITIES
None

COMMINUTOR
Type: One, Worthington 12c4
Size: "A"
(bar screen in bypass channel)

BIOLOGICAL TREATMENT

CONTACT TANK
Volume: 55.46 m^3
Retention: 2.7 hr.

REAERATION
Volume: 115.47 m^3
Retention: 5.5 hr.

BLOWERS
Type: Three, Roots 67RAI
Size: each 1530 rpm

CLARIFIER
Size: 7.0m dia. x 4.7m swd
Volume: 158.65 m^3
Retention: 7.6 hr.

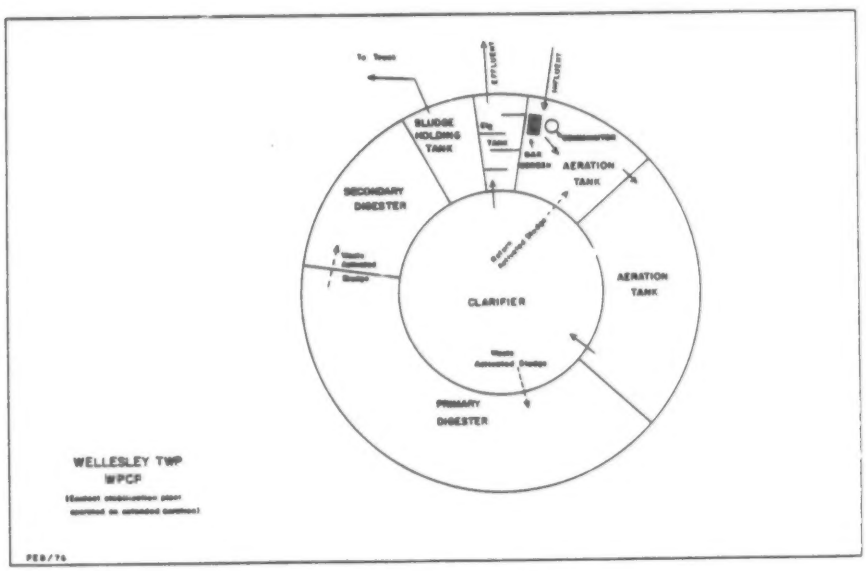
AEROBIC DIGESTER 1
Volume: 204.11 m^3

AEROBIC DIGESTER 2
Volume: 72.28 m^3

SLUDGE HOLDING TANK
Volume: 30.46 m^3

CHLORINE CONTACT CHAMBER
Volume: 22.23 m^3
Retention: 1.1 hr.

CHLORINATOR
Type: One F and P



DESIGN DATA - IMPERIAL

PROJECT: Wellesley Twp. WPCP

PROJECT NO. 1-0178-68

TREATMENT: Contact Stabilization plant operated as Extended Aeration

DESIGN FLOW: 0.11 mgd

BOD - Raw Sewage 200 mg/l
- Removal 93%

SS - Raw Sewage 250 mg/l
- Removal 94%

RAW SEWAGE PUMPS
Size: Two, each 320 USgpm @ 27'TDH

GRIT REMOVAL FACILITIES
None

COMMINUTOR
Type: One, Worthington 12c4
Size: "A"
(bar screen in bypass channel)

BIOLOGICAL TREATMENT

CONTACT TANK
Volume: 12,200 I.G.
Retention: 2.7 hr

REAERATION
Volume: 25,400 I.G.
Retention: 5.5 hr

BLOWERS
Type: Three, Roots 67RAI
Size: each 1530 rpm

CLARIFIER
Size: 23' dia.x15.5'swd
Volume: 34,900 I.G.
Retention: 7.6 hr

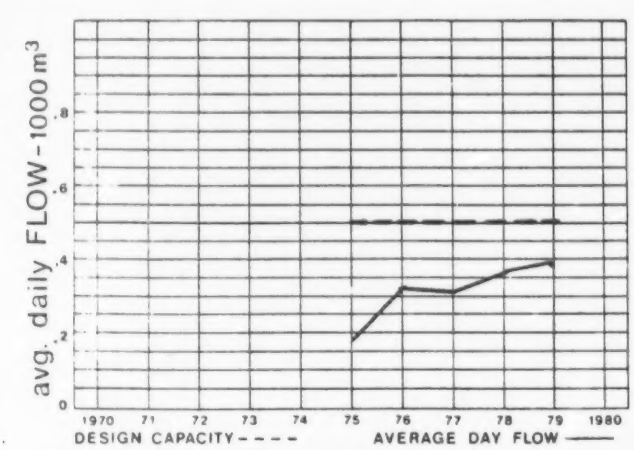
AEROBIC DIGESTER 1
Volume: 44,900 I.G.

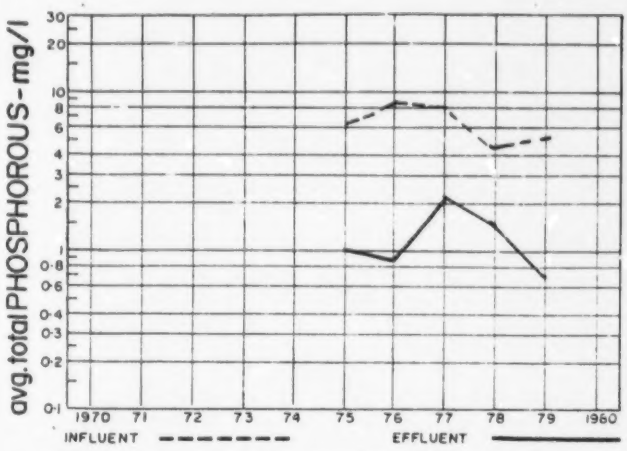
AEROBIC DIGESTER 2
Volume: 15,900 I.G.

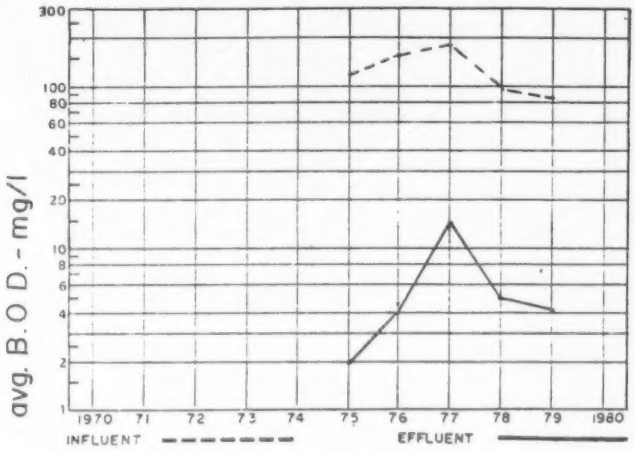
SLUDGE HOLDING TANK
Volume: 6,700 I.G.

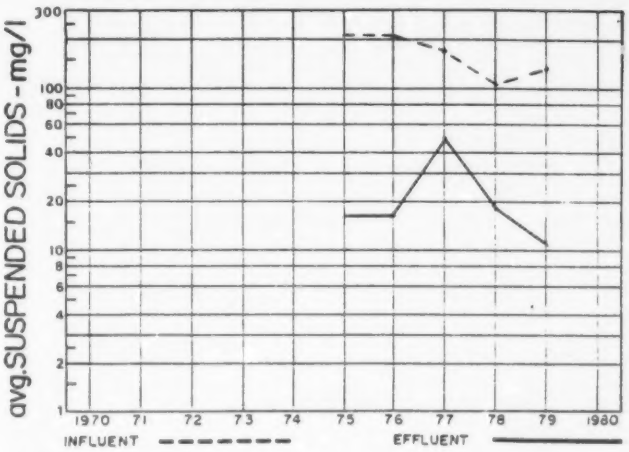
CHLORINE CONTACT CHAMBER
Volume: 4,890 I.G.
Retention: 1.1 hr

CHLORINATOR
Type: One F and P









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001578 WELLESLEY WPCP

MUNICIPALITY : WELLESLEY
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 6,531
POPULATION SERVED : 925
PERCENT SERVED : 14.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.500 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	11.433	.369	1.164	2.000	44.0	7.0	84	.4	106.0	19.4	81	.9	2.9	1.1	62	.021
FEB	7.492	.268	.536	.991	42.0	14.0	66	.2	104.0	16.0	84	.6	4.2	.5	88	.028
MAR	21.225	.685	1.573	2.000	52.0	4.5	91	1.0	92.0	20.5	77	1.5	1.7	.6	64	.023
APR	22.393	.746	2.855		43.0	1.6	96	.9	112.0	16.0	85	2.1	3.1	.5	81	.057
MAY	11.731	.378	.510	1.900	70.0	4.0	94	.7	97.0	10.0	89	1.0	4.2	.4	89	.044
JUN	8.881	.296	.467		75.0	4.5	94	.6	140.0	13.2	90	1.1	6.2	.6	89	.049
JUL	7.261	.234	.496		102.5	1.0	99	.7	134.0	8.5	93	.9	7.8	.4	94	.053
AUG	6.897	.222	.518		106.0	2.3	97	.7	170.0	6.0	96	1.1	8.9	1.2	86	.053
SEP	7.403	.246	.504		120.0	3.0	97	.8	175.0	8.0	95	1.2	9.3	1.1	88	.061
OCT	8.121	.261	.380		208.0	1.6	99	1.6	183.0	9.0	95	1.4	10.8	.5	94	.083
NOV	14.089	.469	1.311		60.0	2.7	95	.8	139.0	10.0	92	1.8	3.3	.7	78	.036
DEC	16.756	.540	1.562		82.0	3.0	96	1.3	142.0	16.0	88	2.1	3.6	.9	72	.044
TOTAL	143.682							10.0				16.0				.552
AVERAGE		.393			83.7	4.1	95		132.8	12.7	90		5.5	.7	86	
MAXIMUM			2.855	2.000												
NO. OF SAMPLES					24	24			45	43			25	25		

DESIGN DATA - METRIC

WILMOT (BADEN)

PROJECT: Wilmot Twp. (Baden) WPCP

PROJECT NO.: 1-0351-66

TREATMENT: Extended Aeration

DESIGN FLOW 0.923 $10^3 m^3/d$

BOD - Raw Sewage - 240 mg/l

SS - Raw Sewage - 300 mg/l

PRETREATMENT

RAW SEWAGE PUMPS

Type: Two, Crane STF centrifugal
Size: each 36.34 l/s @ 11.58 m TDH

OPEN CHANNELS

Size: Two, each 0.46m x 5.8m x 0.7m
Volume: (each) $1.773 m^3$
Retention: (one): 2.8 min

COMMINUTOR

Type: Heligear HTMI
Size: 50 rpm

BIOLOGICAL TREATMENT

AERATION TANK

Volume: $1609.2 m^3$
Retention: 26.2 hr.

CLARIFIER

Size: 8.2m i.d. x 6.9m
Volume: $213.21 m^3$
Retention: 5.5 hr.
Loading -
- Surface: $18.68 m^3/m^2 \cdot d$
- Weir: $87.01 m^3/m \cdot d$

BLOWERS

Type: Three, Roots 76RA1

AEROBIC DIGESTER

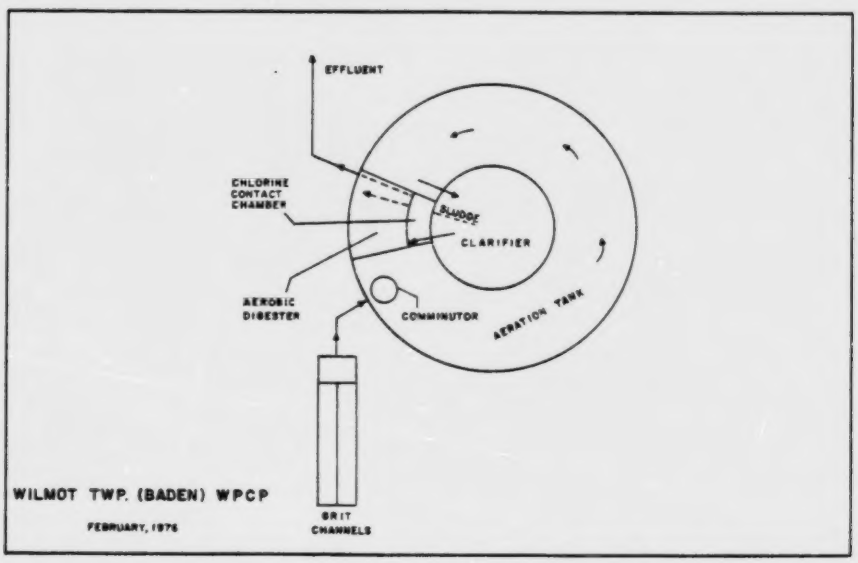
Volume: $86.37 m^3$

CHLORINE CONTACT CHAMBER

Volume: $21.37 m^3$
Retention: 33 min.

CHLORINATOR

Type: W and T v-800
Size: 22.68 Kg/day



DESIGN DATA - IMPERIAL

PROJECT: Wilmot Twp (Baden) WPCP

PROJECT NO. 1-0036-66

TREATMENT: Extended Aeration

DESIGN FLOW: 0.203 MIGD

BOD - Raw Sewage - 493 lb/day

SS - Raw Sewage - 620 lb/day

PRETREATMENT

RAW SEWAGE PUMPS

Type: Two, Crane STF centrifugal
Size: each 480 gpm @ 38' TDH

GRIT CHANNELS
Size: Two, each 1.5' x 19' x 2.2'
Volume: (each) 390 I.G.
Retention (one): 2.8 min

COMMINUTOR
Type: Heligear HTMI
Size: 50 rpm

BIOLOGICAL TREATMENT

AERATION TANK
Volume: 222,000 I.G.
Retention: 26.2 hr

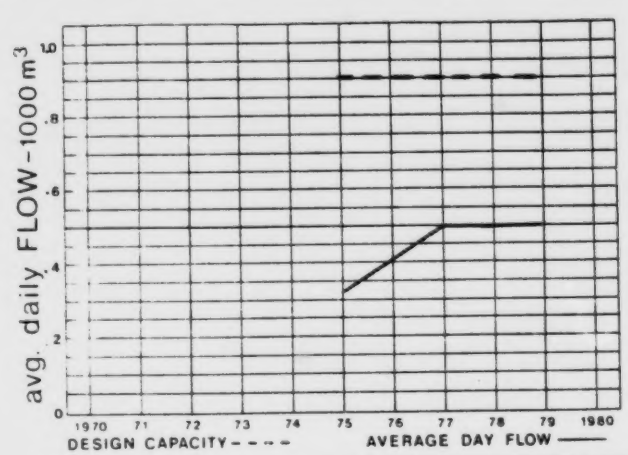
CLARIFIER
Size: 27' i.d. x 12.8' awd
Volume: 46,900 I.G.
Retention: 5.5 hr
Loading -
- Surface: 382/I.G./ft^2/day
- Weir: 2484 I.G/ft/day

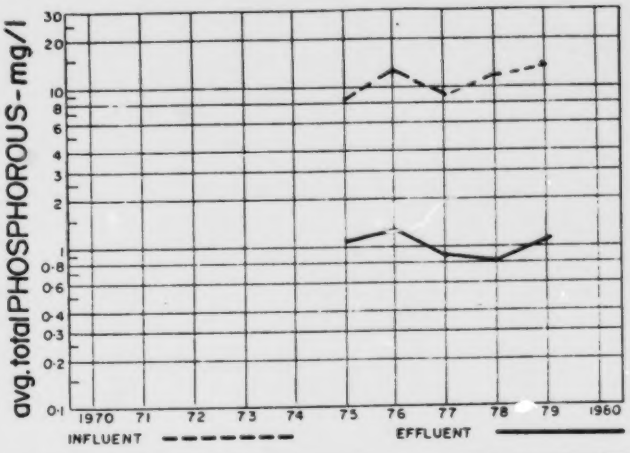
BLOWERS
Type: Three, Roots 76RA1

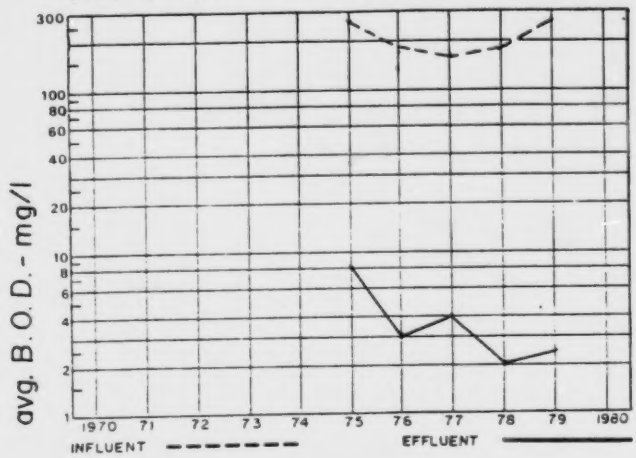
AEROBIC DIGESTER
Volume: 19,000 I.G.

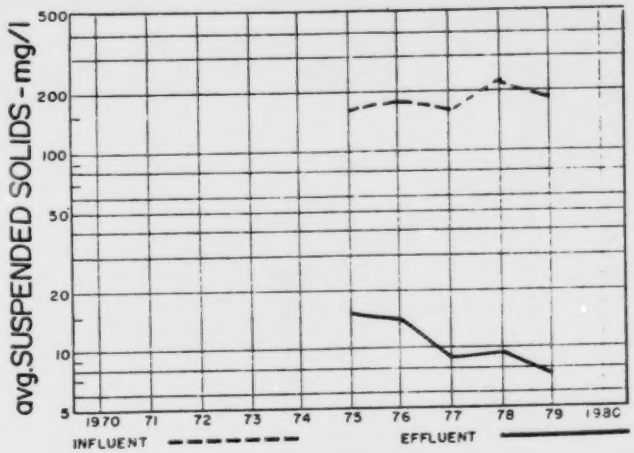
CHLORINE CONTACT CHAMBER
Volume: 4700 I.G.
Retention: 33 min

CHLORINATOR
Type: W and T v-800
Size: 50 lb/day









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001710 BADEN WPCP

MUNICIPALITY : WILMOT BADEN
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 10,731
POPULATION SERVED : 850
PERCENT SERVED : 7.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.922 1000 M3 DESIGN BOD5 : 240.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION				REDUCTION				REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	13.792	.445	.882	1.590	220.0	6.0	97	2.9	170.0	14.0	91	2.1	11.7	.9	92	.149
FEB	12.220	.436	.577	1.500	263.0	2.3	99	3.1	205.0	5.0	97	2.4	14.0	1.2	91	.156
MAR	21.625	.698	1.705	3.591	123.0	4.5	96	2.5	108.0	12.0	88	2.0	9.1	.6	93	.184
APR	20.094	.670	1.420	3.630	172.0	2.5	98	3.4	140.0	10.0	92	2.6	9.6	.2	97	.188
MAY	17.681	.570	1.020	2.180	128.0	9.0	92	2.1	153.0	13.0	91	2.4	11.0	1.1	89	.175
JUN	13.320	.444	.604	1.270	177.5	3.5	98	2.3	190.0	5.0	97	2.4	18.5	.9	94	.234
JUL	12.451	.402	1.022	1.000	103.1	1.7	98	1.2	475.0	5.5	98	5.8	25.0	1.6	93	.291
AUG	11.792	.380	.476	2.180	470.0	.6	99	5.5	220.0	5.0	97	2.5	17.0	1.6	90	.182
SEP	12.317	.411	.558	1.140	265.0	1.7	99	3.2	178.0	6.0	96	2.1	14.0	1.3	90	.156
OCT	13.151	.424	.511	1.136	252.5	4.5	98	3.2	150.0	5.0	96	1.9	10.5	1.6	84	.117
NOV	16.688	.565	.953	1.470	272.5	1.5	99	4.5	160.0	5.0	96	2.5	19.0	.9	94	.301
DEC	18.241	.558	2.060	2.720	175.0	1.0	99	3.1	186.0	5.3	97	3.2	19.8	1.3	93	.337
TOTAL	183.372							37.5				32.5				2 470
AVERAGE		.500			218.4	3.2	98		194.5	7.5	96		14.9	1.1	92	
MAXIMUM			2.060	3.630												
NO. OF SAMPLES					34	26			34	25			33	100		

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

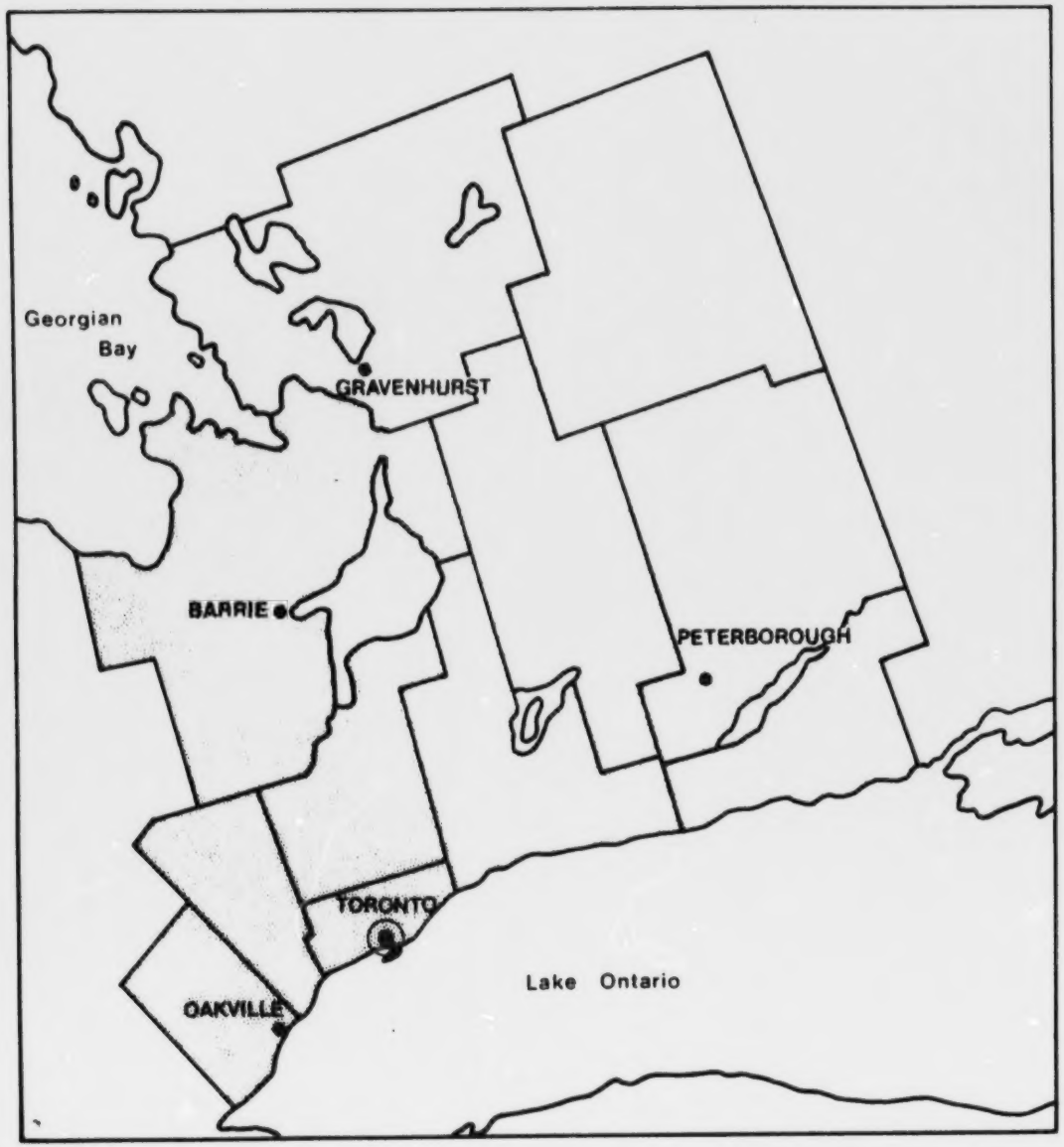
Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386



Central Region
3

Ministry
of the
Environment
Ontario

DESIGN DATA - METRIC

ALLISTON (T) WPCP

PROJECT NO. 1-0074-67 TREATMENT: Extended Aeration

DESIGN CAPACITY 3.5 $10^3 m^3/d$

DESIGN BOD 155 mg/l

SS 200 mg/l

PRETREATMENT

GRIT CHANNELS:

Two, each .8m x 7.6m x .8m swd
Detn: 3.6 min at Des. MGD

COMMINUTOR:

SALA 38cm 37.5 RPM powered by .56 kW Motor

BAR SCREEN:

in one Grit channel

BIOLOGICAL TREATMENT

AERATION TANKS:
Two, 17.7m dia. x 4.6m swd
Volume: (total) 2097.4m^3 Detn: 14.4 hr.
Aerators: Two AMES-CROSTA type - 60
with 18.6 kW motor

SECONDARY CLARIFIERS:
10.7m dia. x 3.5m swd
Volume (total) 545.5m^3 Detn: 3.7 Hr.
Overflow rate: 21.99 m^3/m^2-d

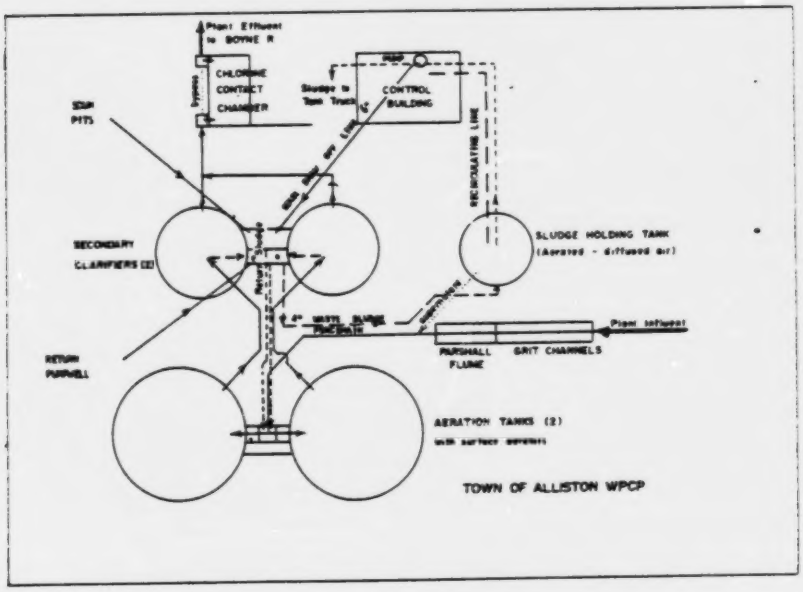
CHLORINE CONTACT CHAMBER:

5 passes, each pass 1.09m x 4.6m x 2.1m swd.
Volume (total) 51.69m^3 Detn: 21 min.
Chlorinator: W & T model A-741

SLUDGE DISPOSAL

SLUDGE HOLDING TANK:

4.9m dia. x 41.5m swd
Volume 96.375 m^3
Sludge pump: CARTER Series 800 plunger
4.73 l/s at 18.3 TDH powered by 2.2 kW motor
Blower: SUTORBILT Mod. 3HV13



DESIGN DATA - IMPERIAL

ALLISTON (T) WPCP

PROJECT NO. 1-0074-67
Design Capacity 0.77 MGD
Design BOD 155 mg/l
Design SS 200 mg/l

PRETREATMENT

GRIT CHANNELS:

Two, each 2.5' x 25.0' x 2.5' swd
Detn: 3.6 min at Des. MGD

COMMINUTOR:

SALA 15" 37.5 Rpm powered by
3/4 HP motor

BAR SCREEN:

in one Grit channel

BIOLOGICAL TREATMENT

AERATION TANKS:

Two, 58.0' dia. x 15.0' swd
Volume: (total) 461,390 I. gal. Detn: 14.4 hr.
Aerators: Two AMES-CROSTA type - 60
with 25 HP motor.

SECONDARY CLARIFIERS:

35.0' dia x 10.0' swd
Volume (total) 120,000 I. gal. Detn: 3.7 hr.
Overflow rate 450 gpd I ft²

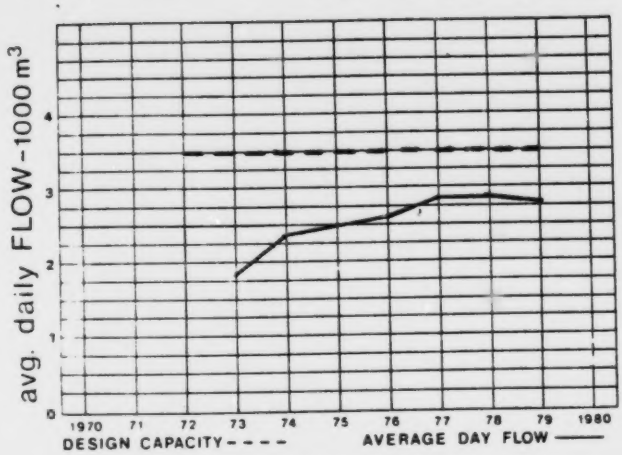
CHLORINE CONTACT CHAMBER:

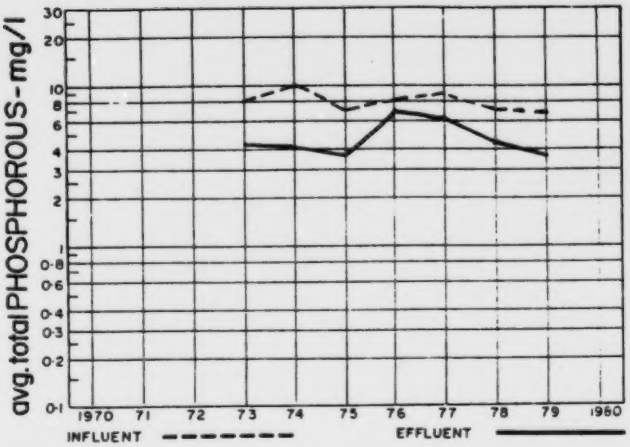
5 passes, each pass 3.6' x 15.0' x 6.75' swd
Volume (total) 11370 I. gal. Detn: 21 min.
Chlorinator: W & T model A-741

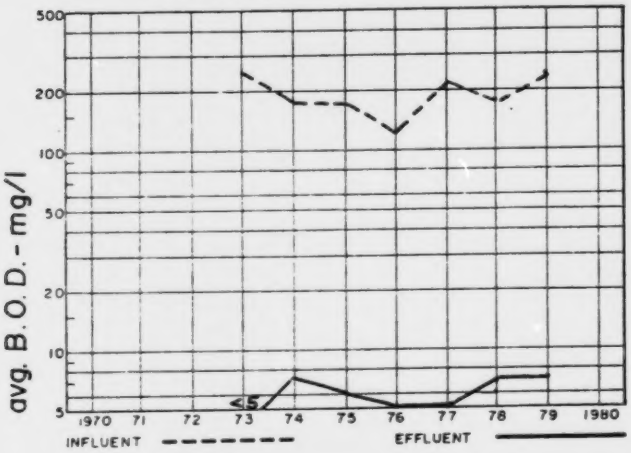
SLUDGE DISPOSAL

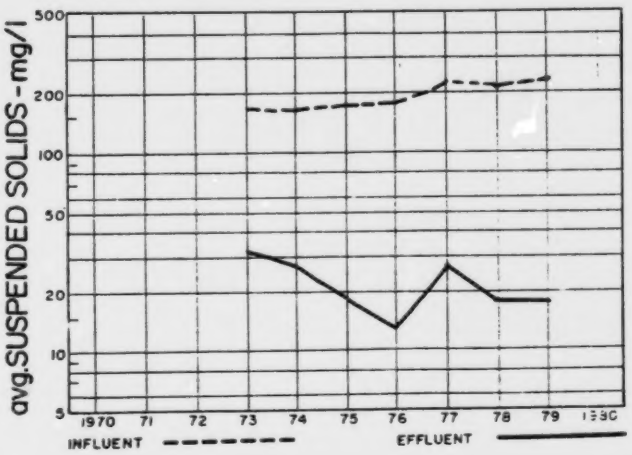
SLUDGE HOLDING TANK:

16.0' dia. x 16.0' swd
Volume 21,200 I. gal.
Sludge pump: CARTER Series 800 plunger
75 USGPM at 60' TDH powered by 3 HP motor.
Blower: SUTORBILT Mod. 3HV13









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001220 ALLISTON WPCP

MUNICIPALITY : ALLISTON
REGION : 03 CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 4,675
POPULATION SERVED : 4,675
PERCENT SERVED : 100.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.500 1000 M3 DESIGN BODS : 155.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	79.937	2.578	2.887	4.901	340.0	2.0	99	27.0	208.0	21.0	89	14.9	7.2	3.4	52	.304
FEB	78.380	2.800	4.214	6.246	210.0	8.0	96	15.8	183.0	19.0	89	12.8	7.2	3.2	55	.314
MAR	95.893	3.091	3.778	5.201	230.0	4.5	98	21.6	145.0	11.0	92	12.8	4.8	2.4	50	.230
APR	96.081	3.203	3.818	6.700	105.0	6.0	94	9.5	168.0	13.5	91	14.8	4.8	1.9	60	.279
MAY	97.555	3.147	3.719	10.000	165.0	4.5	97	15.6	198.0	14.0	92	17.9	5.9	3.8	35	.205
JUN	88.473	2.949	3.532	5.100	170.0	10.0	94	14.1	185.0	16.2	91	14.9	5.8	4.4	24	.124
JUL	81.025	2.614	3.573	10.000	249.0	6.0	97	19.6	259.0	13.0	94	19.9	6.9	5.7	17	.097
AUG	77.066	2.486	2.941	9.000	345.0	5.5	98	26.1	340.0	35.0	89	23.5	6.8	3.3	51	.270
SEP	71.210	2.374	2.840	6.700	384.0	12.0	96	26.4	301.0	26.0	91	19.5	9.0	4.3	52	.335
OCT	75.810	2.445	2.944	6.600	235.0	10.0	95	17.0	340.0	13.0	96	24.7	7.9	5.1	35	.212
NOV	73.804	2.460	3.164	4.800	250.0	8.0	96	17.8	233.0	14.0	93	16.1	8.1	3.9	51	.310
DEC	77.770	2.509	3.983	5.700	300.0	9.0	97	22.6	250.0	15.0	94	18.2	8.0	3.8	52	.327
TOTAL	993.004							233.6				210.6				3.007
AVERAGE		2.721			248.5	7.1	97		234.1	17.5	92		6.8	3.7	45	
MAXIMUM			4.214	10.000												
NO. OF SAMPLES					24	23			95	95			24	23		

DESIGN DATA - METRIC

COLDWATER

PROJECT: Village of Coldwater

PROJECT NO.: 1-0020-66

TREATMENT: Extended aeration

DESIGN FLOW: Q546 $10^3 m^3/d$

BOD - Raw Sewage 170 mg/l

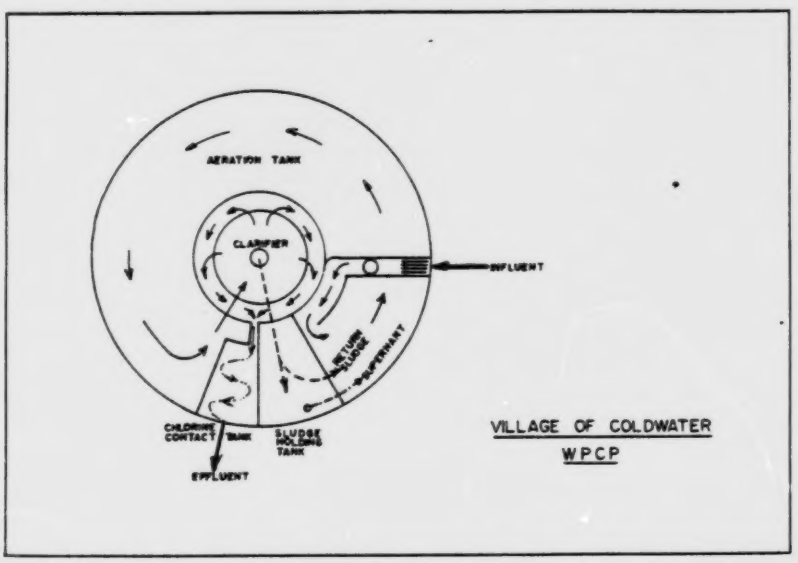
SS - Raw Sewage 200 mg/l

PUMPING STATIONS

No. 1 - 2 submersible pumps plus one standby
@ 18.77 l/s when two running

No. 2 - 2 submersible pumps @ 17.18 l/s

No. 3 - 1 submersible pump @ 6.16 l/s.



VILLAGE OF COLDWATER
WPCP

DESIGN DATA - IMPERIAL

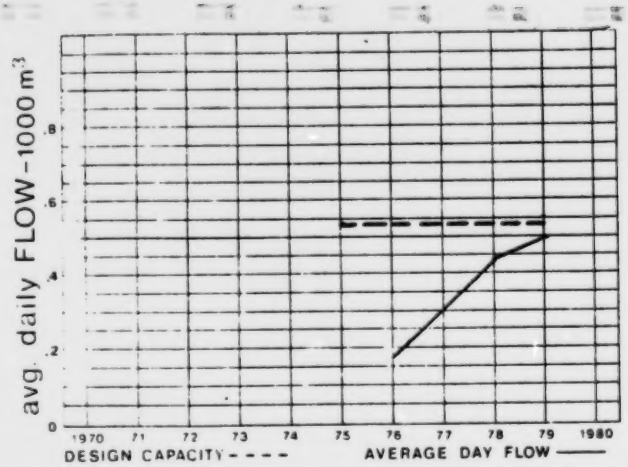
PROJECT	Village of Coldwater
PROJECT NO.	1-0020-66
TREATMENT	Extended Aeration
DESIGN FLOW	0.120 mgd
BOD - Raw Sewage	170 mg/l
SS - Raw Sewage	200 mg/l

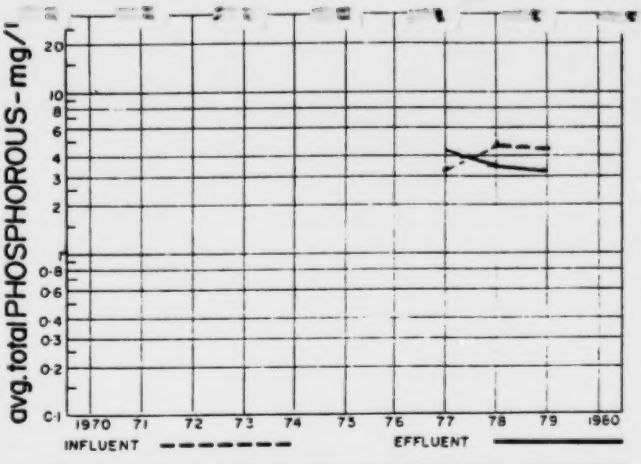
PUMPING STATIONS

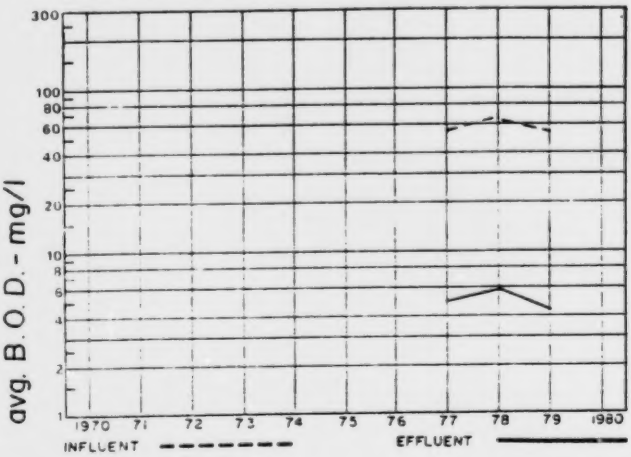
No. 1- 2 submersible pumps plus one standby
@ 248 Igpm when two running

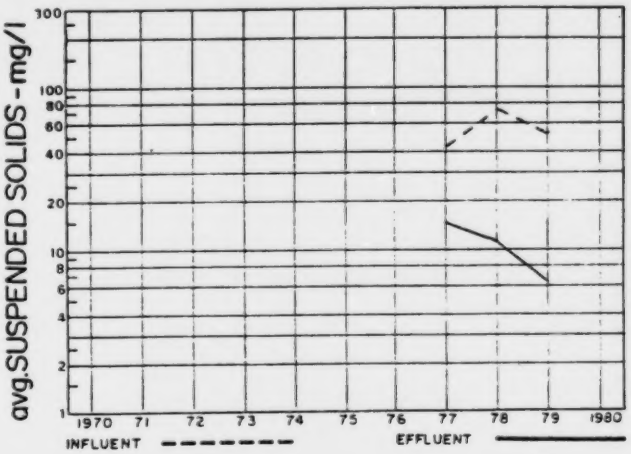
No. 2- 2 submersible pumps @ 227 Igpm each

No. 3- 1 submersible pump @ 81.4 Igpm









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001596 COLDWATER WPCP

MUNICIPALITY : COLDWATER
REGION : 03 CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

* DATA NOT AVAILABLE

CURRENT POPULATION : 804
POPULATION SERVED : 740
PERCENT SERVED : 92.0

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.545 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
					INFLUENT	EFFLUENT		REDUCTION	INFLUENT	EFFLUENT		REDUCTION	INFLUENT	EFFLUENT		REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	2.700	.514	650		90.0	7.0	92	.2	91.0	16.0	82	.2	4.6	4.6		
FEB	14.284	509	591		19.0	4.0	78	.2	30.0	5.0	83	.3	2.1	2.6	-	-
MAR	27.790	896	1.186		42.0	5.0	88	1.0	60.0	9.0	85	1.4	4.9	2.3	53	.072
APR	21.073	.702	.901		68.0	6.0	91	1.3	70.0	10.0	85	1.2	4.4	1.6	63	.059
MAY	16.766	.541	.705		90.0	3.5	96	1.4	120.0	5.0	95	1.9	5.5	2.2	60	.055
JUN	13.130	.438	.573		44.0	2.0	95	.5	70.0	5.0	92	.8	5.1	3.7	27	.018
JUL	11.397	.368	.500		90.0	3.0	96	.9	30.0	8.0	73	.2	2.4	3.8	-	-
AUG	12.245	.395	.486		15.0	3.5	76	.1	30.0	8.0	73	.2	3.0	*		
SEP	11.285	.376	.432		20.0	4.8	76	1	35.0	15.0	57	.2	2.2	4.4	-	-
OCT	18.447	.595	.791		80.0	5.0	93	1.3	95.0	5.0	94	1.6	5.8	5.1	12	.013
NOV	18.413	.614	.773		38.0	3.0	92	.6	75.0	7.0	90	1.2	4.9	2.6	46	042
DEC	21.095	.680	1.137		43.0	4.0	90	.8	80.0	5.0	93	1.5	5.5	2.8	52	061
TOTAL	188.625							8.9				11.2				.320
AVERAGE		.552			53.2	4.2	92		65.5	8.1	87		4.2	3.2	23	
MAXIMUM			1.186													
NO. OF SAMPLES					12	12			12	12			12	11		

DESIGN DATA - METRIC

PROJECT Millbrook

PROJECT NO.: 1-0067-67

TREATMENT: Extended Aeration

DESIGN FLOW: 1.1 $10^3 m^3/d$

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 250 mg/l

Sewage Pumping Station
Type: Three 24.22 l/s submersible sewage pumps. Any two in parallel provide 40.49 l/s @ 10.06 m TDH
Well: One oversized wet well 186.91 m^3 for 4 hours storage at design flow in the event of a power failure.

Inlet Works
Type: Twin grit channels each 6.86m long by 0.46m wide with a proportional descharge weir to control velocities at approx 0.305 m/s
Type: One 304.8mm flowminutor and a bypass channel equipped with a manually cleaned bar screen.
Type: One parshall flume (152.4 mm throat) for measuring raw sewage flows.

Aeration Tank
Size: One 24.38m x 8.53m x 4.27m deep aeration tank
Retention: 18.7 hours at DWF
Power: Two 7.46 kW platform mounted mechanical aerators with upper and lower impellers

MILLBROOK

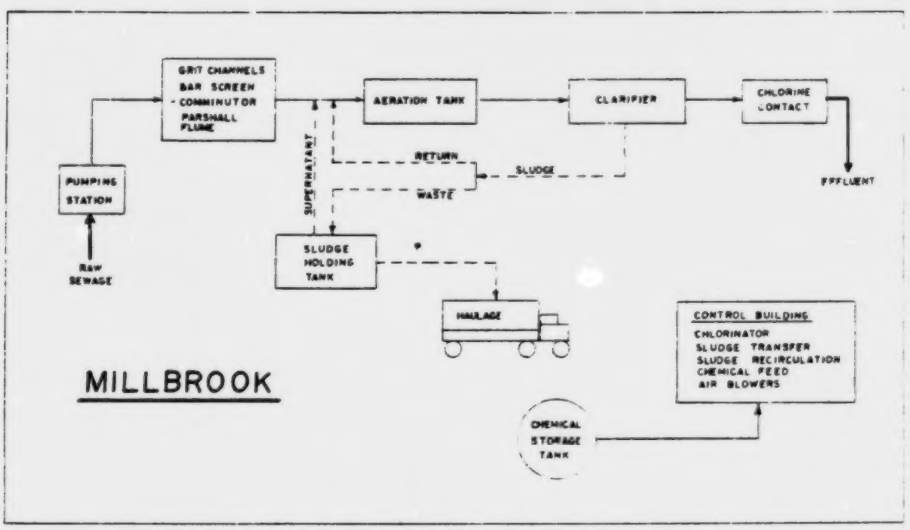
Final Clarification Tank
Size: One rectangular tank 18.59m x 5.79m x 3.05m deep
Rate: 34.222 m^3/m^2-d S.S.R. at peak flow (3.500 $10^3 m^3/d$)
Sludge collection by chain and flight longtitudinal and cross collectors.

Chlorination
Type: One chlorine contact chamber
Retention: 30 minutes at DWF
Type: One gas chlorinator - 45.36 kg/d

Sludge Handling
Tanks: Two aerated sludge holding tanks
Size: 2.74m x 3.35m x 3.05m deep
Blower: One rotary positive displacement type blower capable of supplying 16.72 l/s at 41.37 kPa
Pumps: Two horizontal non-clog, activated sludge pumps each capable of pumping 26.19 l/s at 14.33m TDH
Power: One 7.46 kW variable speed motor
One 7.46 kW constant speed motor
293-1170 RPM and 1150 RPM.

Chemical Feed System
Tank: One 27.28 m^3 chemical storage tank for alum, ferric chloride or ferrous sulphate
Pump: Two (one standby) mechanical diaphragm chemical metering duplex pumps each rated at 0.006 l/s at 3.05m TDH to feed to the aeration tank

Out-fall Sewer
48.77 m of 406.4mm dia. sewer discharging to Baxter Creek



DESIGN DATA - IMPERIAL

PROJECT Millbrook

PROJECT NO. 1-0067-67

TREATMENT Extended Aeration

DESIGN FLOW 0.250 MIGD

DESIGN BOD - 200 mg/l

DESIGN SS - 250 mg/l

SEWAGE PUMPING STATION

Three 320 IGPM submersible pumps. Two in parallel provide 535 IGPM @ 33' T.D.H. One oversized wet well 6,600 cu. ft. Four hours storage of design flow.

INLET WORKS

Twin grit channels each 22.5'x1.5' with a proportional weir control velocity of 1.0 ft/sec.
1 -12 inch flowminutor and a by-pass channel with manually cleaned bar screen. One parshall flume (16" throat) for flow measurement.

AERATION TANK

1 - 80'x28'x14' dp aeration tank. 18.7 hours detention @ DWF. 2 - 10hp platform mounted mechanical aerators.

FINAL CLARIFICATION TANK

1 - tank 61'x19'x10' dp SMD rated at 700 IGPD/ft^2 S.S.R. at peak flow (0.77 MIGD).

CHLORINATION

1 chlorine contact chamber
30 minutes detention at DWF.
1 gas chlorinator - 100 lb/day

SLUDGE HANDLING

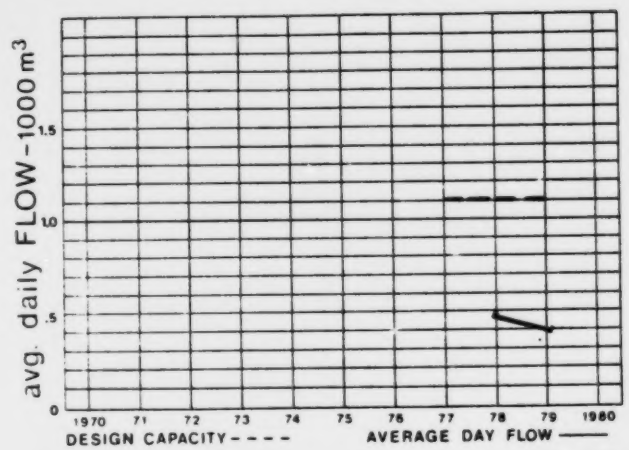
2 aerated sludge holding tanks each 9'x11'x10' dp.
1 rotary positive desplacement type blower capable of supplying 40 CFM @ 6 PSIG.
2 horizontal non-clog, activated sludge pumps each 346 IGPM @ 47' T.D.H.
1 - 10hp variable speed motor and 1 - 10hp constant speed motor, 293-1170 RPM and 1150 RPM.

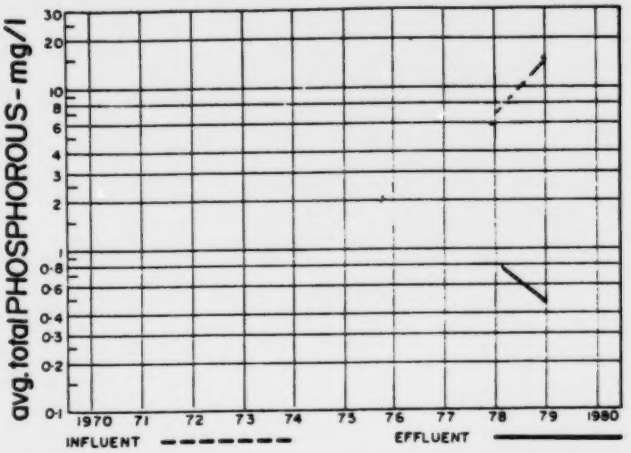
CHEMICAL FEED SYSTEM

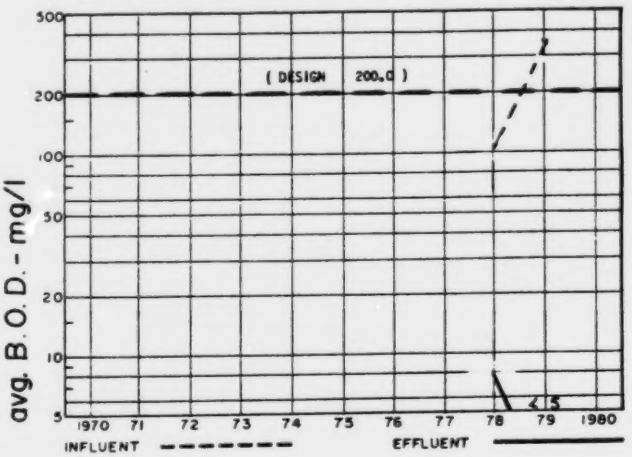
6000 IG. storage tank for alluminum or iron salts. Two (one standby) mechanical diaphragm metering duplex pumps each rated at 5 IGPH at 10' T.D.H. to feed to the aeration tank.

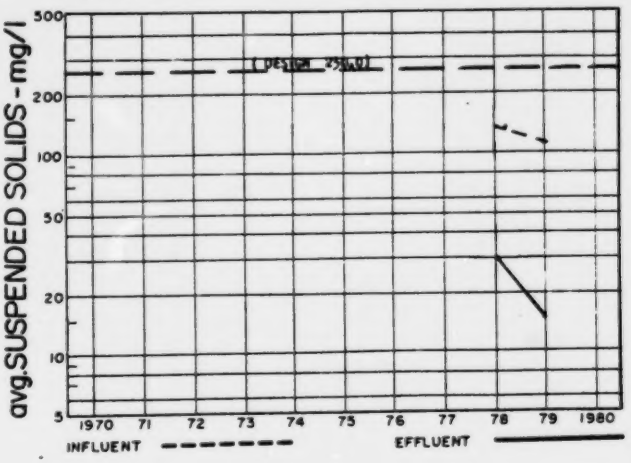
OUTFALL

Discharging to Baxter Creek.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002238 MILLBROOK WPCP

MUNICIPALITY : MILLBROOK
REGION : 03 CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,103
POPULATION SERVED : 892
PERCENT SERVED : 80.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.136 1000 M3 DESIGN BODS : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	20.652	.668	.974	.423	130.0	4.0	96	2.6	140.0	21.0	85	2.4	6.1	.4	93	.118
FEB	13.947	.500	.668	.582	110.0	8.0	92	1.4	100.0	40.0	60	.8	5.6	9	83	.066
MAR	19.207	.636	1.132		40.0	3.0	92	.7	60.0	15.0	75	.8	4.2	.5	88	.071
APR	16.689	.357	1.144	.275	76.0	3.5	95	1.2	120.0	20.0	83	1.6	8.6	.5	93	.135
MAY	14.300	.461	.885	.333	155.0	1.2	99	2.1	190.0	16.3	91	2.4	7.5	.5	93	.100
JUN	11.811	.393	.486	.486	95.0	2.0	97	1.0	115.0	11.0	90	1.2	5.6	.4	92	.061
JUL	9.389	.303	.495	.227	90.0	.4	99	.8	120.0	13.0	89	1.0	8.0	.3	96	.072
AUG	12.493	.403	.878	.218	22.0	2.0	90	.2	30.0	11.0	63	.2	4.0	.3	92	.046
SEP	11.417	.380	.571	.206	105.0	1.6	98	1.1	100.0	15.0	85	.9	8.9	.3	95	.097
OCT	17.345	.516	.906	.208	24.0	5.0	79	.3	250.0	14.0	94	4.0	12.0	1.1	90	.189
NOV	20.213	.674	.999		98.0	1.0	98	1.9	175.0	7.7	95	3.3	5.2	.2	95	.100
DEC	16.575	.535	.999	.367	110.0	2.5	97	1.7	195.0	12.0	93	3.0	9.4	.4	95	.149
TOTAL	184.038							15.5				22.2				1.204
AVERAGE		.486			87.9	2.8	96		132.9	16.3	87		7.0	.5	92	
MAXIMUM			1.144	.582												
NO. OF SAMPLES					14	14			12	12			12	12		

DESIGN DATA - Metric

PROJECT: Clarkson WPCP

PROJECT NO: 1-0053-66

TREATMENT: Extended Aeration

DESIGN FLOW: 54.5 $10^3 m^3$

BOD: Raw Sewage 188 mg/l

SS-Raw Sewage 200 mg/l

PRIMARY TREATMENT

Screening
Type: Mechanical

GRIT TANKS
Size: Two, (each) 6.4 m x 26.6 m x 4.2 m awl
(806.48 m^3)
Retention: (each) 26 min.

SECONDARY TREATMENT

AERATION TANKS
Type: Four-pass, rectangular
Size: Two, each pass 6.2 m x 84.5 m x 4.6 m awl
(21507 m^3)
Retention: 11.4 hr

BLOWERS
Size: Two (each 16298 l/s)

SECONDARY SEDIMENTATION
Size: Two, each 76.0 m x 24.3 m x 3.6 m awl
(136152 m^3)
Retention: 7.2 hr

SLUDGE PUMPS

Recirculating
Size: Three, (each) 5071.9 l/s

Wasting
Size: Four, (each) 454.2 l/s

CHLORINATORS
Type: Fisher and Porter
Size: Two, each 907.2 kg/day

SLUDGE HANDLING

SLUDGE TREATMENT PLANT

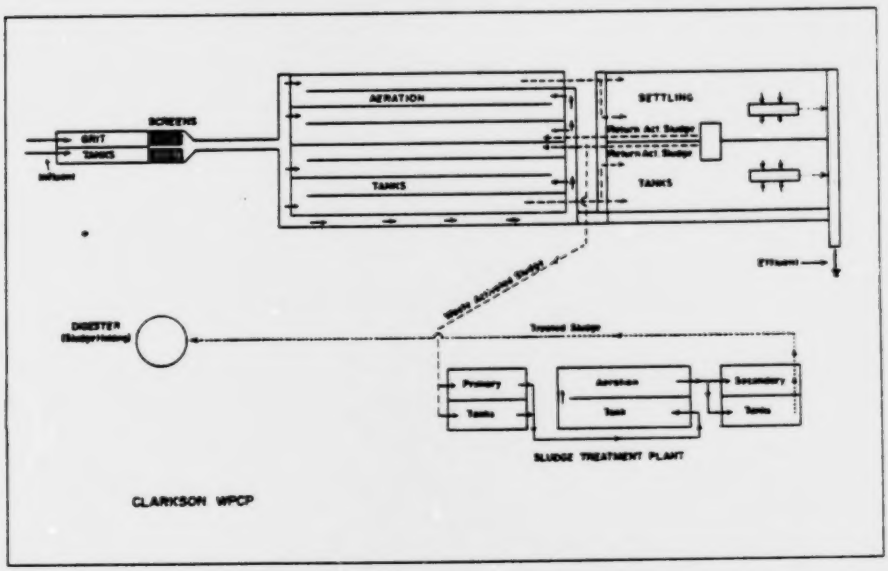
PRIMARY SEDIMENTATION
Size: Two, each
18.2 m x 4.3 m x 3.0 m
(477.33 m^3)

AERATION
Type: Two-pass, diffused air
FLEXOFUSERS
Size: One
36.5 m x 5.5 m x 3.4 m each pass
(137.7)

Air Supply: 3 blowers
585.1 l/s, 7.10 l/s,
698.5 l/s (51.7 kPa)

SECONDARY SEDIMENTATION
Size: Two, 22.5 m x 4.3 m x 3.3 m
(622.8 m^3 total)

DIGESTER: (used as holding tank)
Type: Concrete fixed-roof gas mixing
Size: One, 55 m dia x 6.1 m swd
(917.6 m^3)



CLARKSON WPCP

PROJECT: Clarkson WPCP

PROJECT NO: 1-0053-66

TREATMENT: Extended Aeration

DESIGN FLOW: 12 mgd

BOD: Raw Sewage 222 mg/l

SS-Raw Sewage 250 mg/l

PRIMARY TREATMENT

SCREENING
Type: Mechanical

GRIT TANKS
Size: Two, (each) 21' x 97.4' x 13.9' awl
(177,400 I.G. each)
Retention: (each) 26 min.

SECONDARY TREATMENT

AERATION TANKS
Type: four-pass, rectangular
Size: two, each pass 20.25' x 312' x 15' awl
(4,731,000 I.G. total)
Retention: 11.4 hr

BLOWERS
Size : two (each) 39,000 cfm

SECONDARY SEDIMENTATION
Size: two, each 250' x 80' x 12' awl
(2,995,000 I.G. total)
Retention: 7.2 hr

SLUDGE PUMPS
Recirculating
Size: three, (each) 6,700 gpm

Wasting
Size: four, (each) 600 gpm

CHLORINATORS
Type: Fisher and Porter
Size: Two, each 2,000 lb/day max.

SLUDGE HANDLING

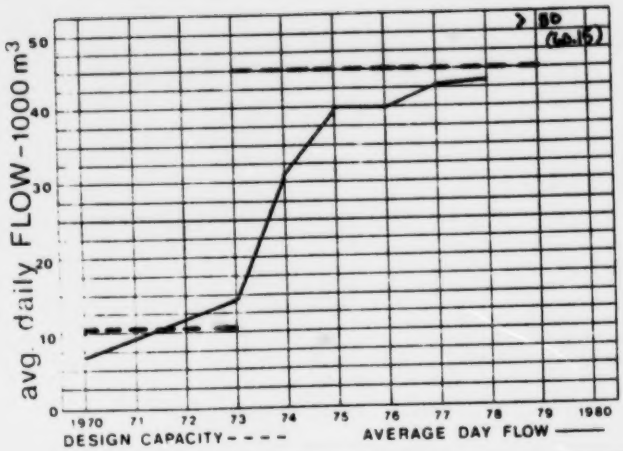
SLUDGE TREATMENT PLANT

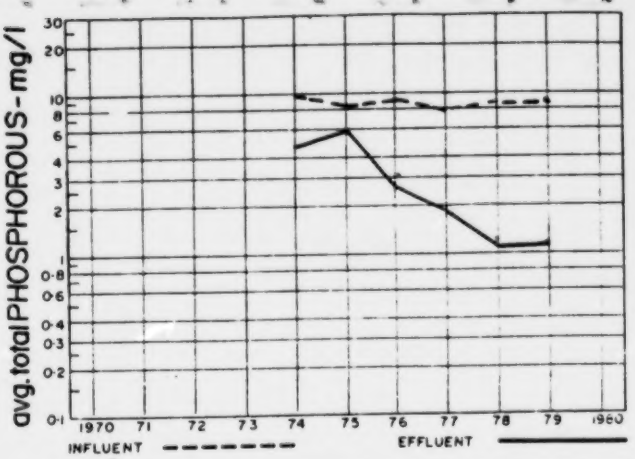
PRIMARY SEDIMENTATION
Size: Two, each 60' x 14' x 10'
(105,000 I.G. total)

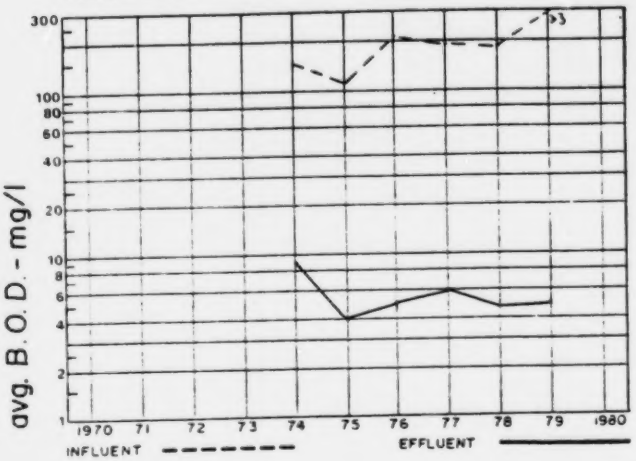
AERATION
Type: two-pass, diffused air
FLEXOFUSERS
Size: One, 120' x 18' x 11.25' each pass
(303,000 I.G.)
Air Supply: 3 blowers, 1400 cfm, 1700 cfm,
2150 cfm (7.5 psi)

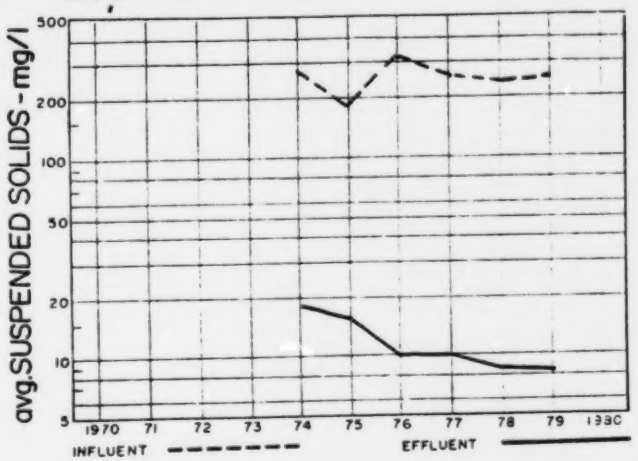
SECONDARY SEDIMENTATION
Size: two, 74' x 14' x 10.75'
(137,000 I.G. total)

DIGESTER: (used as holding tank)
Type: concrete fixed-roof gas mixing
Size: One, 55' dia x 20' swd
(52,400 ft³)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001328 CLARKSON WPCP SOUTH-PEEL SYSTEM

MUNICIPALITY : SOUTH PEEL (CLARKSON)
REGION : 03 CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 100,000
POPULATION SERVED : 100,000
PERCENT SERVED : 100%

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 54.552 1000 M3 DESIGN BOD5 : 185.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	1962.781	63.317	92.020	181.840	192.0	4.0	97	369.0	233.0	8.0	96	441.6	6.7	1.0	85	11.188
FEB	1610.670	57.525	70.813	95.466	108.0	3.0	97	169.1	175.0	5.0	97	273.8	6.6	.7	89	9 503
MAR	1849.867	59.675	133.725	181.840	132.0	8.4	93	228.6	170.0	10.7	93	294.6	6.2	1.0	83	9 619
APR	1971.000	65.700	86.800	133.700	255.0	6.6	97	489.5	229.0	11.3	95	429.0	8.1	.8	89	14.231
MAY	2097.300	67.700	81 300	109.100	351.0	6.6	98	722.3	279.0	12.0	95	559.9	8.5	1.2	84	15 143
JUN	1673.800	55.800	82.000	101.800	268.0	4.9	98	440.3	307.0	4.0	98	507.1	8.1	.9	88	12.018
JUL	1478.800	47.700	57.800	84.600	241.0	5.6	97	348.1	241.0	6.9	97	346.1	8.6	.8	89	11.402
AUG	1667.000	54.100	67.700	109.600	221.0	4.4	98	361.0	267.0	8.0	97	431.7	10.3	1.1	88	15.236
SEP	1693.700	56.457	67.800	90.900	445.2	4.1	99	746.9	265.6	7.7	97	436.8	7.2	1.8	74	9 112
OCT	1863.200	60.103	75.200	103.200	371.0	3.2	99	685.1	489.0	8.8	98	894.6	9.1	1.3	84	14.365
NOV	1719.100	57.300	75.800	107.300	672.0	5.1	99	1146.4	466.0	10.8	97	782.5	16.2	1.1	93	26.079
DEC	2371.300	76.490	153.600	181.844	401.0	3.5	99	942.5	333.0	5.4	98	776.8	12.3	1.7	86	25.136
TOTAL	21958.518							6649.4				6175.1				173.032
AVERAGE		60.156			304.7	4.9	98		287.8	8.2	97		8.9	1.1	87	
MAXIMUM			153.600	181.844												
NO. OF SAMPLES					116	116			116	116			116	116		

DESIGN DATA - METRIC

PORT McNICOLL

PROJECT Village of Port McNicoll WPCP

PROJECT NO. 1-0091-67

TREATMENT Contact Stabilization

DESIGN FLOW 1.05 $10^3m^3/d$

BOD - Raw Sewage - 170 mg/l

SS - Raw Sewage - 200 mg/l

PRETREATMENT

RAW SEWAGE PUMPS
Two, Type: PACIFIC
Size: each 21.2 l/s

GRIT CHAMBERS
Two, each 3.7m x .3m x .38m swd
Volume: (each) $.43m^3$ Detention: 0.6 min.

BIOLOGICAL TREATMENT

CLARIFIER
Size 8.8m dia. x 3.7m awl
Detention: 5.2 hr.
Overflow Rate: 17.01 m^3/m^2-d
Volume: $229.6m^3$

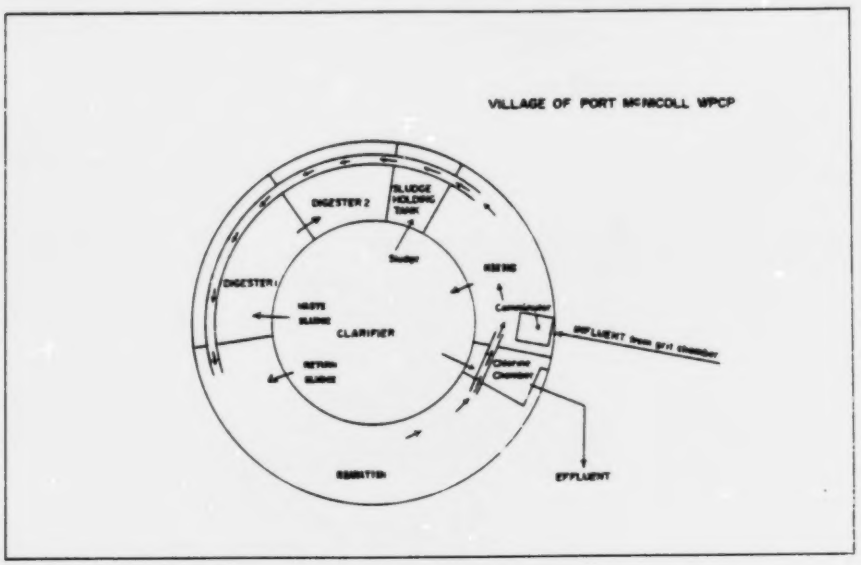
AERATION TANK
Volume: $395.14\ m^3$
Detention: 9.2 hr.
Blowers: Three CORD CA-59
Size: 250.7 at 103.4 kPa

AEROBIC DIGESTER 1
Volume: $118.2\ m^3$

AEROBIC DIGESTER 2
Volume: $77.28\ m^3$

CHLORINE CHAMBER
Volume: $30.69\ m^3$
Detention: 42 min.

SLUDGE HOLDING TANK
Volume: $40.91\ m^3$



DESIGN DATA - IMPERIAL

PROJECT Village of Port McNicoll WPCP

PROJECT NO. 1-0091-67

TREATMENT Contact Stabilization

DESIGN FLOW 0.23 MGD

BOD - Raw Sewage - 170 mg/l

SS - Raw Sewage - 200 mg/l

PRETREATMENT

RAW SEWAGE PUMPS
Two, Type: PACIFIC
Size: each 280 igpm

GRIT CHANNELS
Two, each 12' x 1' x 1.25 awl
Volume: (each) 94 gal. Detention: 0.6 min.

BIOLOGICAL TREATMENT

CLARIFIER
29' dia. x 12.25' awl
Volume: 50,500 l. Gal.
Detention: 5.2 hr.
Overflow Rate: 348 l. Gal. /ft^2/day

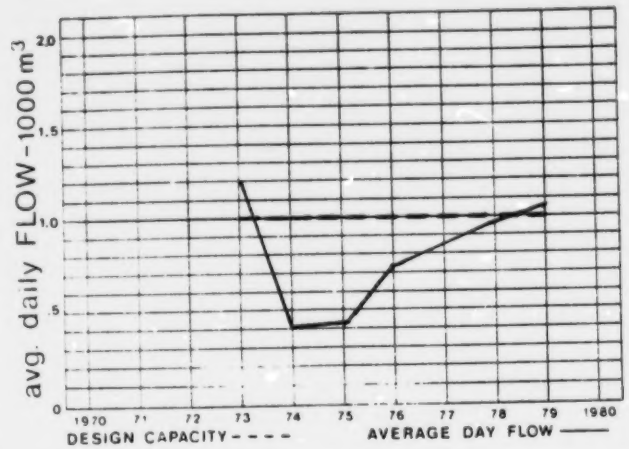
AERATION TANK
Volume: 87,800 l. Gal.
Detention: 9.2 hr.
Blowers: Three CORD CA-59
Size: 600 cfm at 15 psi

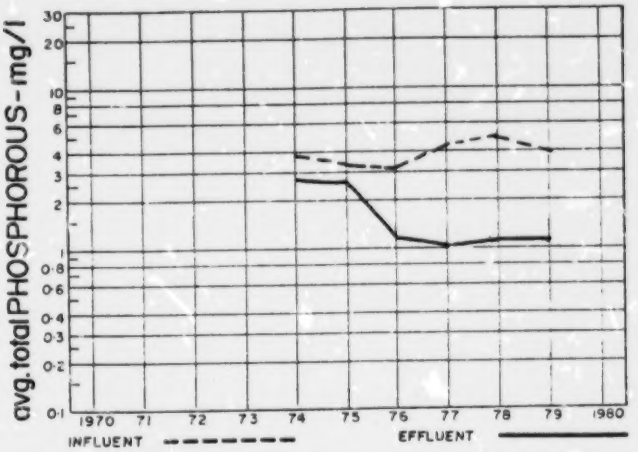
AEROBIC DIGESTER 1
Volume: 26,000 l. Gal.

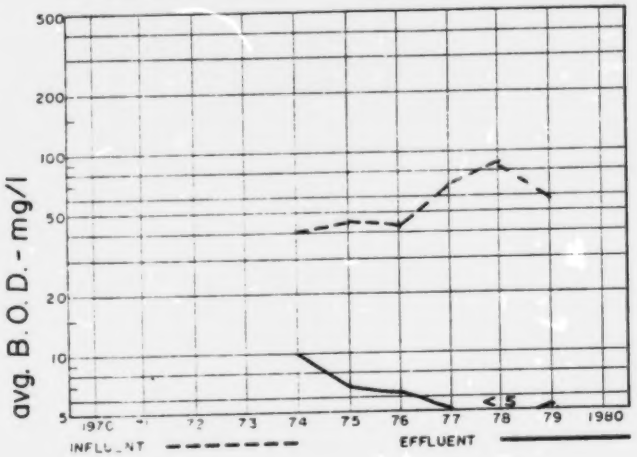
AEROBIC DIGESTER 2
Volume: 17,000 l. Gal.

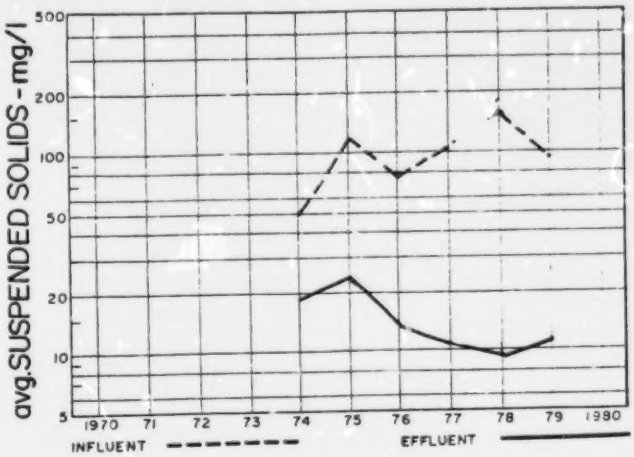
CHLORINE CHAMBER
Volume: 6750 l. Gal.
Detention: 42 min.

SLUDGE HOLDING TANK
Volume: 9,000 l. Gal.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001417 PORT MC NICOLL WPCP

MUNICIPALITY : PORT MC NICOLL
REGION : 03 CENTRAL

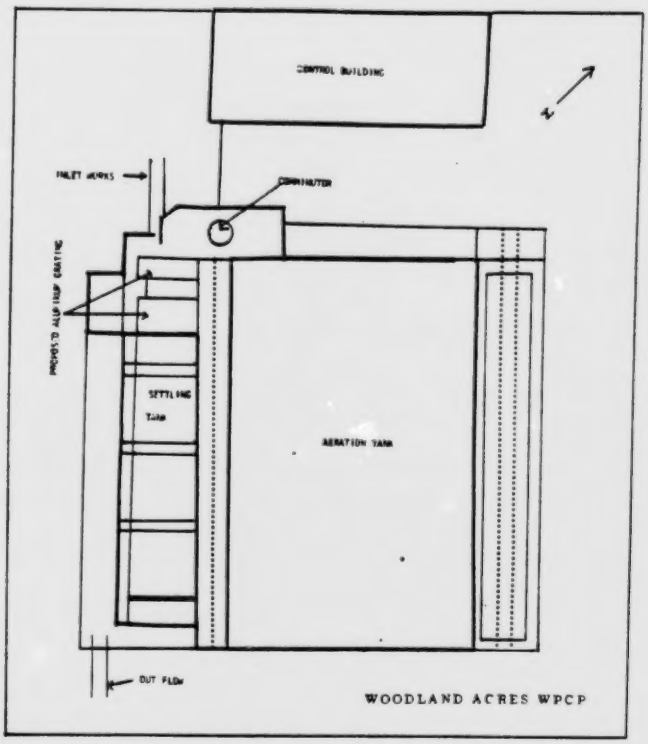
TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,956
POPULATION SERVED : 1,100
PERCENT SERVED : 56.2

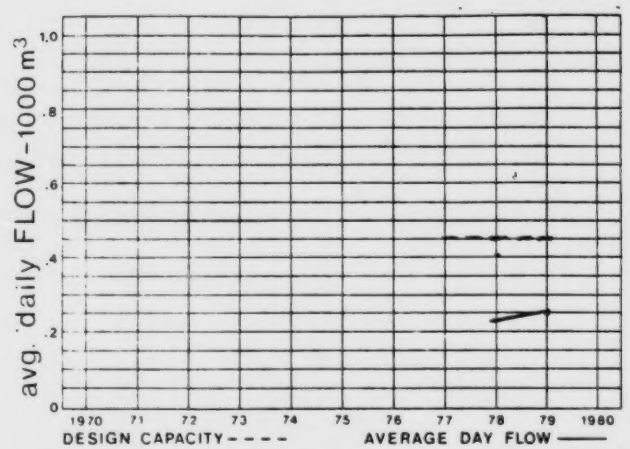
OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

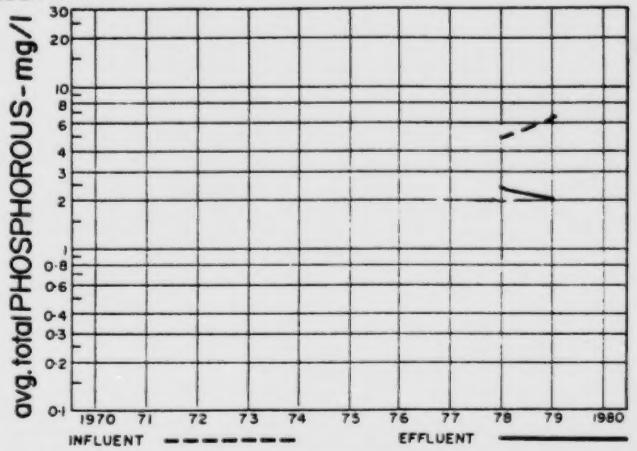
DESIGN CAPACITY : 1.045 1000 M3 DESIGN BODS : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

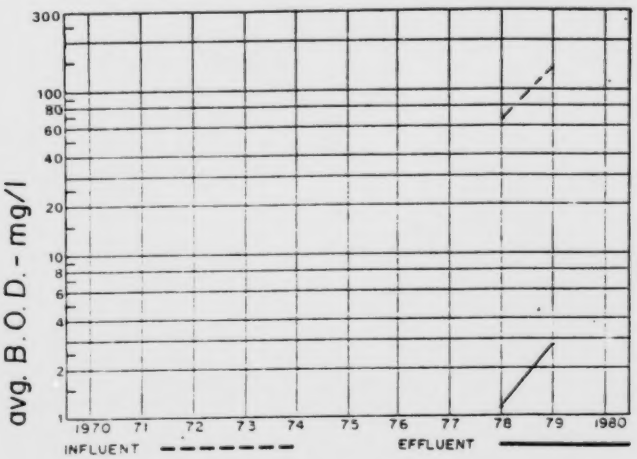
	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	32.572	1.050	1.714		80.0	8.0	90	2.3	71.0	19.0	73	1.6	3.9	1.2	69	.088
FEB	25.508	.909	1.187		70.0	6.0	91	1.6	105.0	15.0	85	2.2	4.9	1.2	75	.094
MAR	58.750	1.896	2.605		50.0	5.0	90	2.6	60.0	12.0	80	2.8	2.0	1.2	40	.047
APR	42.580	1.419	1.896		50.0	12.0	76	1.6	80.0	20.0	75	2.5	3.3	.8	75	.106
MAY	29.030	.936	1.391		32.0	11.0	65	.6	55.0	20.0	63	1.0	2.9	1.3	55	.046
JUN	21.680	.723	958		80.0	3.0	96	1.6	95.0	5.0	94	1.9	4.5	1.3	71	.069
JUL	22.720	.733	1.200		23.0	2.0	91	.4	50.0	5.0	90	1.0	3.2	1.3	59	.043
AUG	25.400	.819	1.047		110.0	1.0	99	2.7	200.0	.6	99	5.0	7.0	1.8	74	.132
SEP	22.810	.760	1.183		62.0	2.5	95	1.3	95.0	15.0	84	1.8	4.7	1.5	68	.073
OCT	29.750	.959	1.302		68.0	2.4	96	1.9	185.0	11.0	94	5.1	5.6	1.5	73	.122
NOV	33.440	1.114	1.768		34.0	7.5	77	.8	55.0	15.0	72	1.3	3.4	.9	71	.082
DEC	47.320	1.577	2.982		32.0	1.4	95	1.4	45.0	5.0	88	1.8	2.8	.4	85	.114
TOTAL	391.560							19.4				28.6				1.016
AVERAGE		1.075			57.5	5.1	91		91.3	11.8	86		4.0	1.2	70	
MAXIMUM			2.982													
NO. OF SAMPLES					12	12			12	12			12	11		

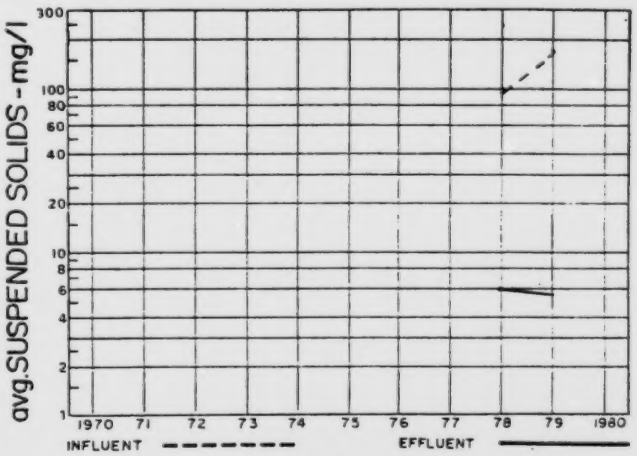

CONTROL BUILDING
INLET WORKS
COMMINUTOR
PROPOSED ALUMINUM GRATING
SETTLING
TANK
AERATION TANK
OUT FLOW
WOODLAND ACRES WPCP

SMITH (WOODLAND ACRES)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110002381 WOODLAND ACRES WPCP

MUNICIPALITY : SMITH TOWNSHIP
REGION : 03 CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 7,675
POPULATION SERVED : 4,200
PERCENT SERVED : 54.7

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	6.796	.218	.514	1.964	70.0	2.0	97	.4	84.0	5.0	94	.5	4.2	2.3	45	.013
FEB	5.437	.195	.318	1.964	130.0	13.0	90	.6	115.0	14.0	87	.5	5.6	2.3	58	.018
MAR	18.725	.614	.909		26.0	4.0	84	.4	37.0	6.0	83	.5	10.0	.6	94	.176
APR	13.390	.446	.709	1.964	30.0	1.0	96	.3	50.0	5.0	90	.6	2.8	1.4	50	.019
MAY	9.620	.310	.434	1.964	50.0	.6	98	.4	60.0	5.0	91	.5	3.2			
JUN	6.054	.202	.254	1.964	53.0	.4	99	.3	75.0	5.0	93	.4	2.9	2.3	20	.004
JUL	4.119	.133	.173	1.964	52.0	1.0	98	.2	70.0	5.0	92	.2	4.9	2.2	55	.011
AUG	5.282	.170	.363		72.0	.4	99	.3	125.0	5.0	96	.6	4.4	2.4	45	.011
SEP	3.804	.130	.182		60.0	.6	99	.2	70.0	5.0	92	.2	3.5	2.5	28	.004
OCT	5.184	.167	.215		215.0	.8	99	1.1	330.0	5.0	98	1.6	4.1	2.4	41	.009
NOV	5.175	.170	.213		940.0	10.0	98	4.8	347.0	5.0	98	1.7	32.0	2.3	92	.154
DEC	8.356	.270	.602		38.0	.2	99	.3	45.0	5.0	88	.3	2.2	1.7	22	.004
TOTAL	91.942							9.7				8.1				.423
AVERAGE		.252			144.6	2.8	98		117.3	5.8	95		6.6	2.0	69	
MAXIMUM			.909	1.964												
NO. OF SAMPLES					12	12			12	12			12	11		

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
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613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Southeastern Region

④

Ministry of the Environ

Ontario

DESIGN DATA - METRIC

BANCROFT

Project: Bancroft WPCP

Project No: 1-0263-71

Treatment: Contact stabilization plant operated as extended aeration

Design Flow: Contact stabilization 1.8 $10^3 m^3/d$
* Extended aeration 1.2 $10^3 m^3/d$
BOD - Raw Sewage - 200 mg/l

Pumping Stations

P.S. No.1
Type: Two, SMART TURNER Submersible
Size: each 18.9 l/s

P.S. No. 2
Type: Two, submersible
Size: each 6.4 l/s

P.S. No. 3
Type: Two, submersible
Size: each 6.4 l/s

P.S. No. 4
Size: Two, each 37.9 l/s @ 16.2m TDH

At-Plant P.S.
Type: Two, SPAANS screw pumps.
Size: each 83.3 l/s @ 5.8m TDH

Grit Channels
Type: Two, rectangular
Size: each 7.3m x .61m x .46m awl
(2.0m^3)
*Retention: each 2.5 min.

Comminutor
Type: one, CORD 3.41m

Biological Treatment

Aeration Cell No. 1
(Future re-aeration)
Volume: 406.5m^3
*Retention: 9.4 hr

Aeration Cell No. 2
(Future aerobic digester No. 1)
Volume: 215.5m^3
*Retention: 4.4 hr

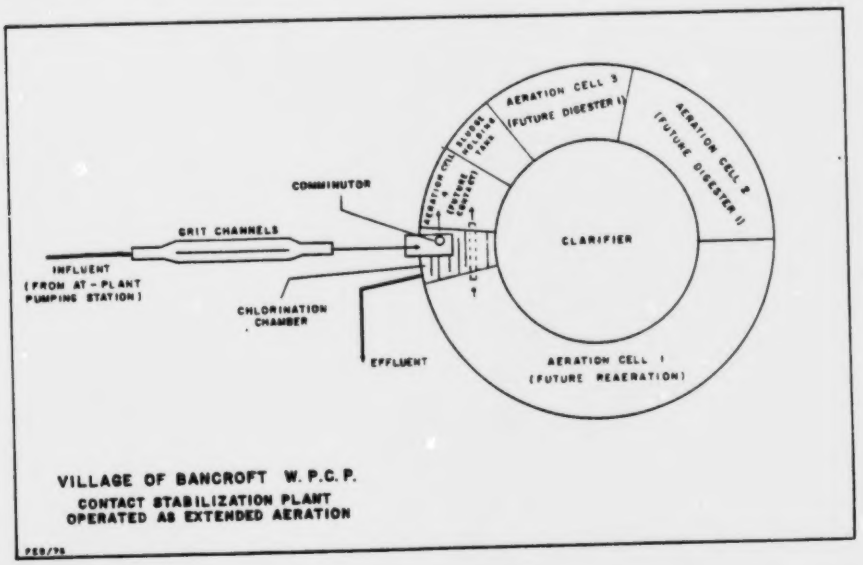
Aeration Cell No. 3
(Future aerobic digester No. 2)
Volume: 137.7m^3
*Retention: 2.8 hr

Aeration Cell No. 4
(Future contact)
Volume: 74.6m^3
*Retention: 1.5 hr

Chlorination Chamber
Volume: 50.0 m^3
*Retention: 1.0 hr

Chlorinator
Type: F and P 70C344
Size: 113.4 kg/day

Clarifier:
Size: 15.2m dia. x 2.5m swd
Volume: 456.9m^3
*Retention: 9.3 hr
Loading
*Surface: 6.5m^3/m^2.d
*Weir: 24.6m^3/m-d



VILLAGE OF BANCROFT W.P.C.P.
CONTACT STABILIZATION PLANT
OPERATED AS EXTENDED AERATION

P&B/PS

DESIGN DATA - IMPERIAL

Project: Bancroft WPCP

Project No: 1-0263-71

Treatment: Contact stabilization plant operated as extended aeration

Design Flow: Contact stabilization 0.4 M.I.G.D.
* Extended aeration 0.26 M.I.G.D.
BOD - Raw Sewage - 200 mg/l

Pumping Stations

P.S. No.1
Type: Two, SMART TURNER Submersible
Size: each 250 I.G.P.M.

P.S. No.2
Type: Two, submersible
Size: each 85 I.G.P.M.

P.S. No.3
Type: Two, submersible
Size: each 85 I.G.P.M.

P.S. No.4
Size: Two, each 500 I.G.P.M. @ 52.5' TDH

At-Plant P.S.
Type: Two, SPAANS screw pumps.
Size: each 1100 I.G.P.M. @ 19' TDH

Grit Channels
Type: Two, rectangular
Size: each 24' x 2' x 1.5' awl
(450 I.C.)
*Retention: each 2.5 min.

Comminutor
Type: one, CORD 16-inch

Biological Treatment

Aeration Cell No.1
(Future re-aeration)
Volume: 101,300 I.G.
*Retention: 9.4 hr

Aeration Cell No.2
(Future aerobic digester No.1)
Volume: 47,400 I.G.
*Retention: 4.4 hr

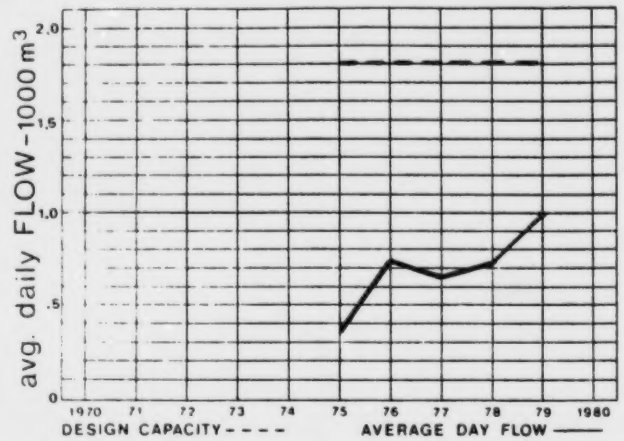
Aeration Cell No.3
(Future aerobic digester No.2)
Volume: 30,300 I.G.
*Retention: 2.8 hr

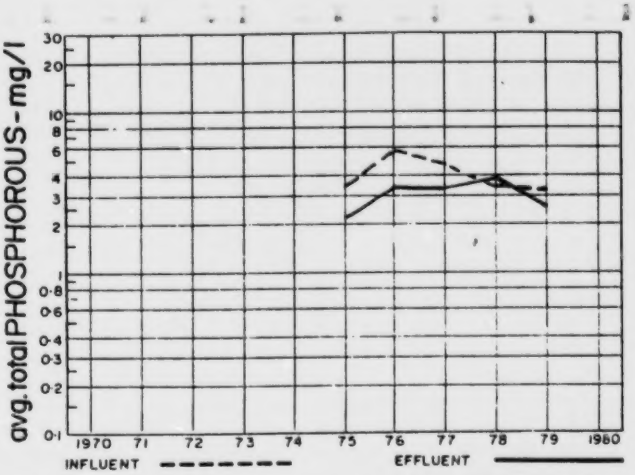
Aeration Cell No.4
(Future contact)
Volume: 16,400 I.G.
*Retention: 1.5 hr

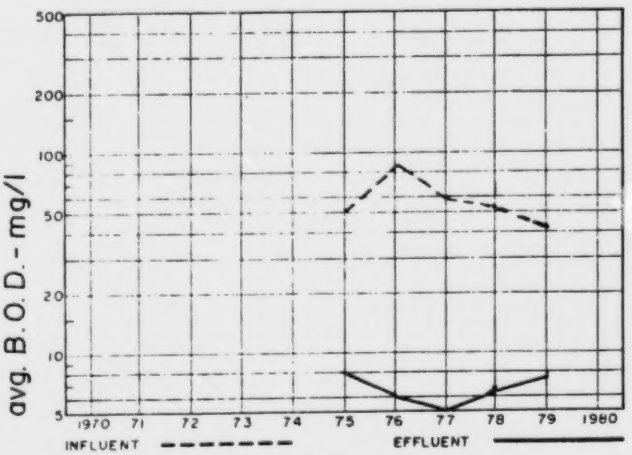
Chlorination Chamber
Volume: 11,000 I.G.
*Retention: 1.0 hr

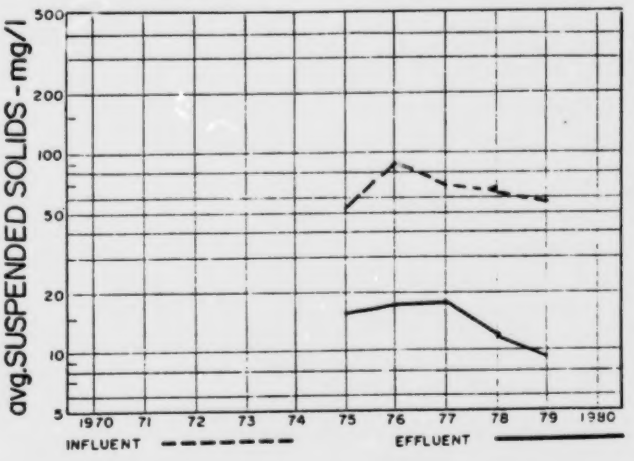
Chlorinator
Type: F and P 70C344
Size: 250 lb/day

Clarifier:
Size: 50' dia. x 8.2' swd
Volume: 100,500 I.G.
*Retention: 9.3 hr
Loading:
* Surface: 132 I.G./ft^2/day
* Weir: 1655 I.G./ft/day









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001239 BANCROFT WPCP

MUNICIPALITY : BANCROFT
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 2,346
POPULATION SERVED : 2,000
PERCENT SERVED : 85.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.818 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	27.931	.901	1.114	2.046	73.0	11.5	84	1.7	60.0	11.1	81	1.3	4.0	3.5	12	.014
FEB	24.017	.858	.918	1.637	73.0	24.0	67	1.1	46.0	20.5	55	.6	5.6	3.5	37	.050
MAR	34.263	1.105	1.450	2.182	28.0	16.5	41	.3	51.0	12.5	75	1.3	2.0	2.5	-	-
APR	41.057	1.368	1.808	2.545	44.0	9.5	78	1.4	59.8	9.8	83	2.0	2.6	1.5	40	.043
MAY	40.772	1.315	1.659	1.945	22.0	1.8	91	.8	47.6	4.5	90	1.7	2.5	1.9	22	.022
JUN	32.360	1.078	2.100	1.818	59.5	3.4	94	1.8	59.1	6.5	88	1.7	5.2	2.5	50	.088
JUL	27.360	883	1.065	2.910	19.0	3.2	83	.4	55.8	6.0	89	1.3	3.0	3.0		
AUG	27.492	.886	1.077	2.637	38.0	3.5	90	.9	56.0	4.5	91	1.4	3.2	2.5	21	.019
SEP	26.588	886	1.155	1.824	35.0	3.0	91	.8	62.0	4.5	92	1.5	2.7	2.9	-	-
OCT	28.679	.925	992	1.920	38.5	2.5	93	1.0	53.6	3.3	93	1.4	4.0	2.5	37	.043
NOV	28.816	960	1.231	1.920	35.0	3.5	90	.9	72.7	18.4	74	1 5	2.9	3.5	-	-
DEC	32.273	1.041	1.097	1.920	59.0	5.0	91	1.7	88.0	14.5	83	2.3	3.7	2.6	28	.034
TOTAL	371.608							13.2				18.4				.311
AVERAGE		1.017			43.6	7.2	83		59.3	9.6	83		3.4	2.7	21	
MAXIMUM			2.100	2.910												
NO. OF SAMPLES					24	24			76	71			18	20		

DESIGN DATA - METRIC

PROJECT: Village of Barry's Bay

PROJECT NO: 1-0126-67

TREATMENT: Extended aeration with phosphorus removal

DESIGN POPULATION: 2318

DESIGN FLOW: 1.2 $10^3 m^3/d$

BOD: - 220 mg/l

PUMPING STATIONS

No. 1 3 pumps 30.3 l/s @ 9.1 m hd. and 3.7 kW
No. 2 2 pumps 15.9 l/s @ 14.0 m hd. and 7.0 kW
No. 3 2 pumps 6.8 l/s @ 12.5 m hd. and 3.2 kW

BARRY'S BAY

PRETREATMENT

Grit Removal
Twin Channel Bar Screen
Comminutor - 0.56 kW motor

SECONDARY TREATMENT

Aeration Tank

Volume: 1.0 $10^3 m^3$
Loading: .02 kg BOD/m^3

Secondary Sedimentation

Loading, surface: 48.9 $m^3/m^2.d$
Surface Area: 332.8 m

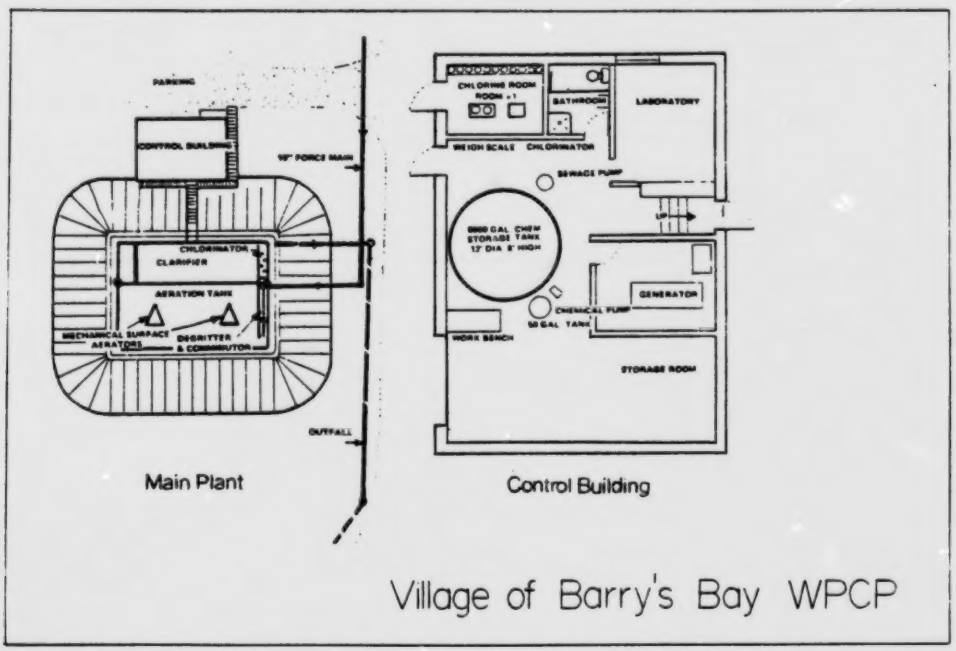
SLUDGE HANDLING

Holding Tank Volume: 77.1 m^3
Air Supply: 292.5 l/s

CHLORINATION

Chlorine Contact Chamber

Volume: 25.8 m^3
Retention: 30 min.



DESIGN DATA - IMPERIAL

PROJECT Village of Barry's Bay

PROJECT NO. 1-0126-67

TREATMENT Extended aeration with phosphorous removal

DESIGN POPULATION 2318

DESIGN FLOW 0.273 mgd

BOD - 220 mg/l

PUMPING STATIONS

No.1 3 pumps 400 gpm @ 30'hd. and 5 hp.
No.2 2 pumps 210 gpm @ 46'hd. and 9.4 hp.
No.3 2 pumps 90 gpm @ 41'hd. and 5 hp.

PRETREATMENT

Grit Removal
Twin Channel Bar Screen
Comminutor - 3/4 hp. motor

SECONDARY TREATMENT

Aeration Tank

Volume: 0.22 mgall.
Loading: 13 lb. BOD/day/1000 $ft.^3$

Secondary Sedimentation

Loading, surface: 1000 lgall/day/$ft.^2$
Surface Area: 1092 $ft.^2$

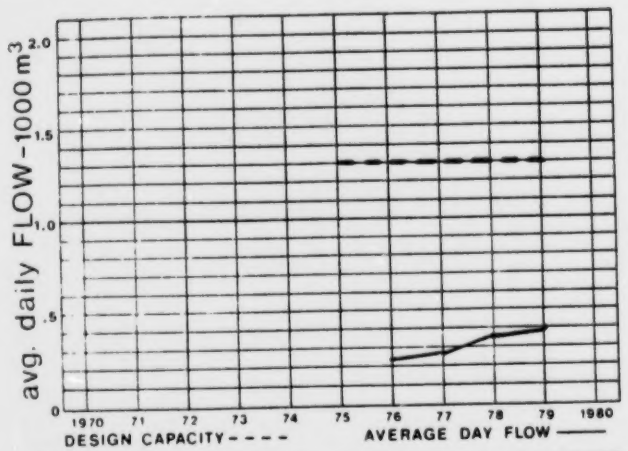
SLUDGE HANDLING

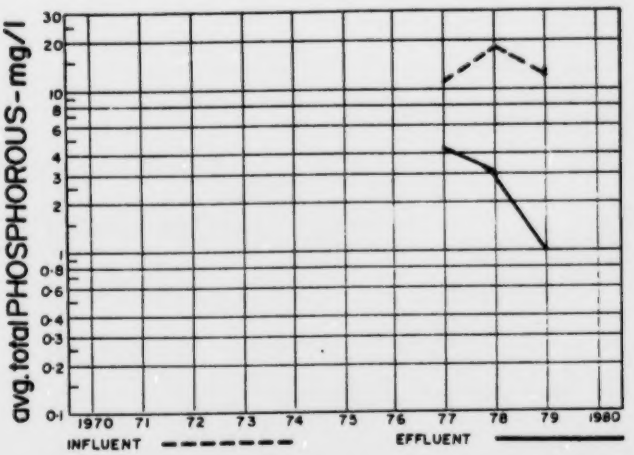
Holding Tank Volume: 2724 $ft.^3$
Air Supply: 700 cfm

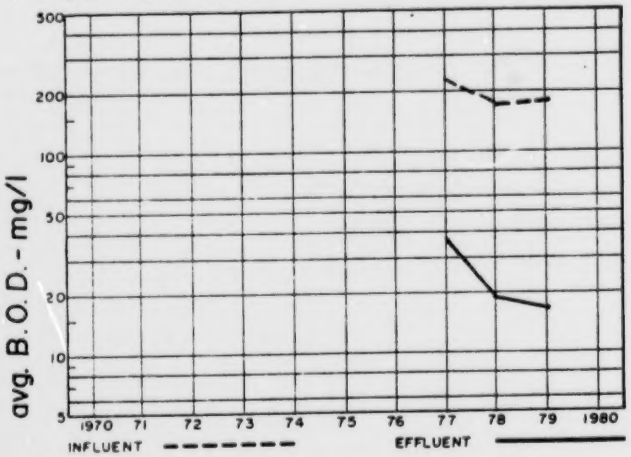
CHLORINATION

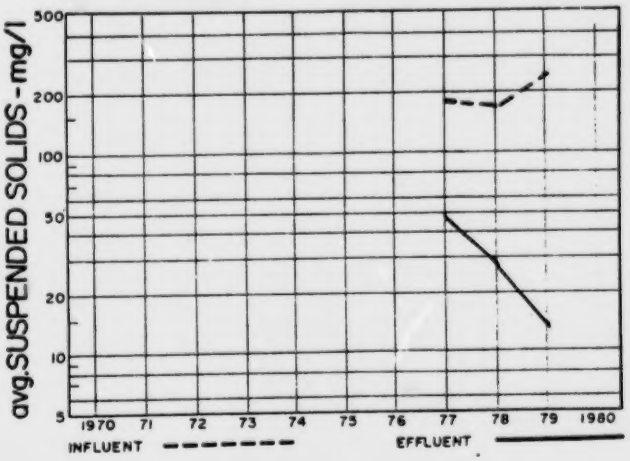
Chlorine Contact Chamber

Volume: 5685 gal.
Retention: 30 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001854 BARRY'S BAY WPCP

MUNICIPALITY : BARRY'S BAY
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION	1,310
POPULATION SERVED	1,400
PERCENT SERVED	106.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.241 1000 M3 DESIGN BODS : 220.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	11.479	.370	.473	.319	245.0	75.0	69	1.9	166.0	20.5	87	1.6	17.0	1.9	88	.173
FEB	11.810	.422	.527	.818	208.0	33.5	83	2.0	196.0	17.0	91	2.1	18.5	2.0	87	.171
MAR	14.988	.483	.645	.909	268.0	58.5	78	3.1	264.0	33.1	87	3.4	17.3	1.3	92	.240
APR	14.786	.490	.546	1.178	168.0	15.0	91	2.2	278.0	19.0	93	3.8	14.7	1.8	87	.191
MAY	13.729	.443	.591	1.178	173.0	6.0	96	2.2	150.0	13.2	91	1.8	13.6	.7	94	.177
JUN	13.868	.462	.505	1.179	119.0	7.5	93	1.5	178.0	9.2	94	2.3	13.3	.7	94	.175
JUL	13.638	.440	.501	1.179	120.0	3.0	97	1.5	137.0	7.8	94	1.7	14.5	.8	94	.188
AUG	12.956	.418	.513	1.179	175.0	5.0	97	2.2	235.0	7.7	96	2.9	9.5	.8	91	.113
SEP	13.092	.436	.545	.200	119.5	4.2	96	1.5	192.0	6.3	96	2.4	5.7	.5	90	.067
OCT	14.418	.465	.545	.200	305.0	2.5	99	4.3	310.0	4.6	98	4.4	6.4	.3	94	.087
NOV	14.593	.486	.545	.041	248.0	3.4	98	3.5	203.0	8.2	95	2.8	10.8	.5	94	.149
DEC	13.911	.449	.636	.150	168.0	3.0	98	2.2	177.0	10.6	94	2.3	6.5	.7	88	.080
TOTAL	163.268							28.7				31.9				1.809
AVERAGE		.447			193.0	18.0	90		207.1	13.1	93		12.1	1.0	91	
MAXIMUM			.645	1.179												
NO. OF SAMPLES					23	22			97	97			90	91		

DESIGN DATA - METRIC

PROJECT: Village of Chalk River WPCP

PROJECT NO: 1-0149-68

TREATMENT: Contact Stabilization
operated as Extended Aeration

DESIGN FLOW: 0.36 $10^3 m^3$/d Extended Aeration
0.55 $10^3 m^3$/d Contact Stabilization

BOD - Removal - 90%

SS - Removal - 90%

MAIN AND RAILWAY STS. P.S.

Pumps: Two each 18.2 L/S

GRIT CHANNELS

Size: Two, each .76m x 6.1 m x .23 m swd
(1.04 m^3. each)
Retention: (each) 0.4 min

BIOLOGICAL TREATMENT

AERATION TANK "A"

(Future Aerobic Digester)
Capacity: 98.6 m^3.
Retention: 0.65 hr

AERATION TANK "B"
(Future Re-aeration tank)
Capacity: 192.3 m^3
Retention: 1.27 hr.

AERATION TANK "C"

(Future Mixing Tank)
Capacity: 75.0 m^3
Retention: 0.49 hr

BLOWERS:
Type: Two, Roots, RAI 812
Size: 18.6 kW

SETTLING TANK

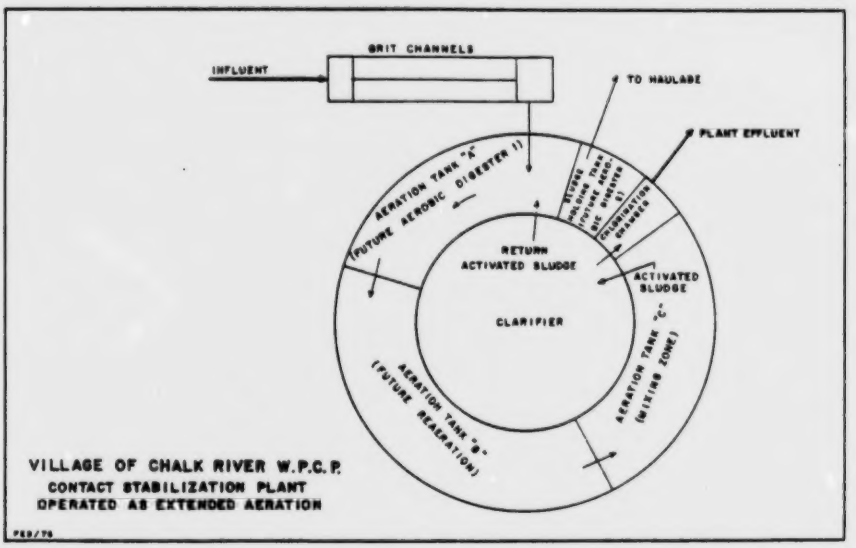
Size: 14.6 m o.d. x 3.1 m swd
Capacity: 240.5 m^3
Retention: 1.6 hr
Loading:
- Surface 2.3 $m^3/m^2 \cdot d$
- Weir 8.2 $m^3/m \cdot d$

SLUDGE HOLDING TANK

(Future Aerobic Digester 2)
Capacity: 28.2 m^3

PLANT P.S.

Pumps: Two, each 22.7 L/S



DESIGN DATA - IMPERIAL

PROJECT: Village of Chalk River WPCP

PROJECT NO: 1-0149-68

TREATMENT: Contact Stabilization
operated as Extended Aeration

DESIGN FLOW: .08 mgd Extended Aeration
0.12 mgd Contact Stabilization

BOD - Removal - 90%

SS - Removal - 90%

MAIN AND RAILWAY STS. P.S
Pumps: Two, each 240 gpm

GRIT CHANNELS
Size: Two, each 2.5' x 20' x .75' swd
(230 I.G. each)
Retention: (each) 0.4 min

BIOLOGICAL TREATMENT

AERATION TANK "A"
(Future Aerobic Digester)
Capacity: 21,700 I.G.
Retention: 0.65 hr

AERATION TANK "B"
(Future Re-aeration tank)
Capacity: 42,300 I.G.
Retention: 1.27 hr.

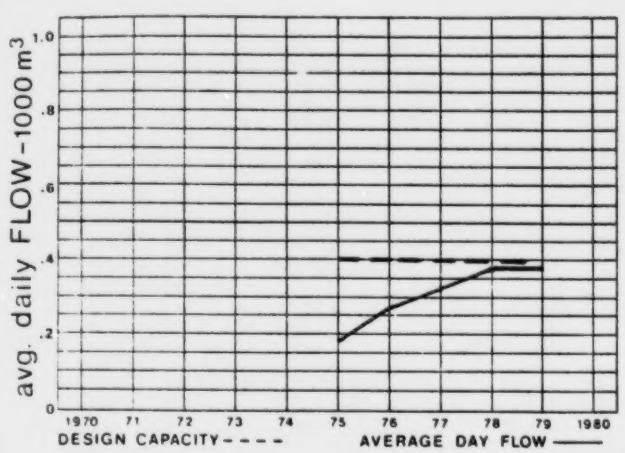
AERATION TANK "C"
(Future Mixing Tank)
Capacity: 16,500 I.G.
Retention: 0.49 hr

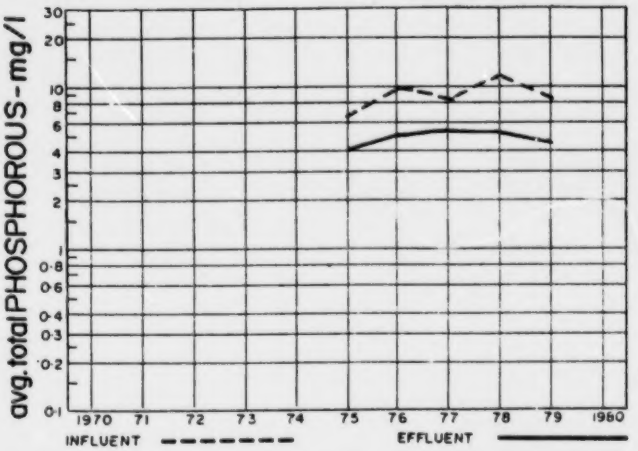
BLOWERS
Type: Two, Roots, RAI 812
Size: 25 HP

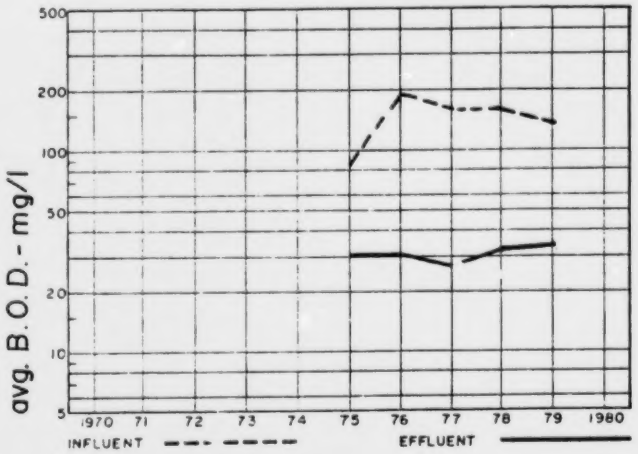
SETTLING TANK
Size: 43' o.d. x 10.2 swd
Capacity: 52,900 I.G.
Retention: 1.6 hr
Loading:
- Surface 47 I.G/ft2/day
- Weir 548 IG/ft/day

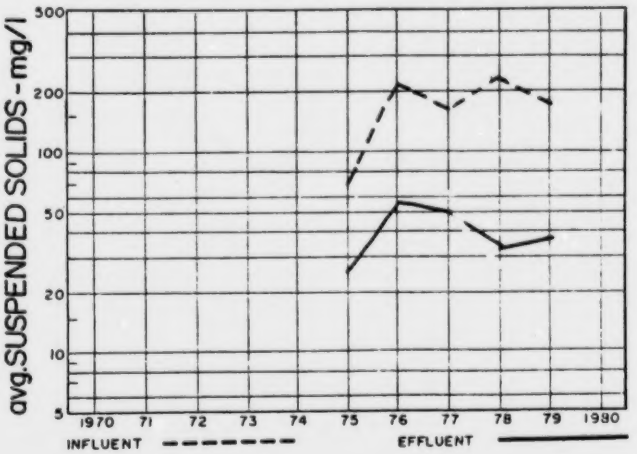
SLUDGE HOLDING TANK
(Future Aerobic Digester 2)
Capacity: 6200 I.G.

PLANT P.S.
Pumps: Two, each 300 gpm









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001587 CHALK RIVER WPCP

MUNICIPALITY : CHALK RIVER
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
CONVERT TO OTHER OPERATING MODE

CURRENT POPULATION : 1,022
POPULATION SERVED : 1,001
PERCENT SERVED : 97.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.383 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	12.374	.399	.409		132.0	97.5	26	.4	238.0	122.0	48	1.4	8.4	6.8	19	.020
FEB	11.029	.394	.441		213.0	37.5	82	1.9	198.0	23.4	88	1.9	9.1	3.9	57	.057
MAR	11.924	.385	.500		217.0	54.0	75	1.9	131.0	47.7	63	.9	8.3	6.5	21	.021
APR	15.902	.531	.668		86.0	34.5	36	.5	95.0	26.4	72	1.0	6.4	2.9	53	.054
MAY	15.742	.507	.590		98.0	23.0	76	1.1	107.8	26.0	75	1.2	6.0	3.2	46	.044
JUN	13.107	.437	.409		83.0	47.0	43	.4	61.0	35.0	42	.3	7.0	5.5	21	.020
JUL	11.064	.356	.777		213.0	15.5	92	2.1	232.0	21.8	90	2.3	10.3	4.8	52	.060
AUG	10.952	.353	.515		255.0	5.0	98	2.7	530.0	14.0	97	5.6	14.0	2.9	79	.122
SEP	10.555	.351	.436		52.0	35.0	32	.1	72.5	19.2	73	.5	8.3	6.3	24	.021
OCT	10.693	.344	.418		153.5	51.5	66	1.0	109.0	57.0	47	.5	7.4	4.7	36	.029
NOV	10.498	.349	.540		135.0	17.0	87	1.2	115.0	25.0	78	.9	8.6	3.7	56	.051
DEC	11.329	.365	.394		135.0	24.0	82	1.2	110.0	40.0	63	.7	3.5	3.3	5	.002
TOTAL	145.169							15.1				17.9				.501
AVERAGE		.398			147.7	38.4	73		166.6	38.1	77		8.1	4.5	43	
MAXIMUM			.777													
NO. OF SAMPLES					21	21			57	53			41	41		

DESIGN DATA - METRIC

DESERONTO

PROJECT: Town of Deseronto WPCP

PROJECT NO.: 1-0010-66

DESIGN FLOW: 1.4 $10^3 m^3/d$

BOD: Raw Sewage 197 mg/l
Removal 90%

SS: Raw Sewage 224 mg/l
Population: 2800

PUMPING STATION (at Plant)
2, Raw sewage pumps
Size: 31.5 l/s @ 7.0m TDH

GRIT REMOVAL
Type: 2 manually cleaned channels
Size: .46m x 6.1m x .6m swd
Volume: 3.6 m^3 Detention: 3.8 min.

COMMINUTION
One, Type: QU250 Design: 52.6 l/s

SCREENING
Bar screen with .6cm bars on 5cm centres

BIOLOGICAL TREATMENT
(Napanee Industries Plant)
(Contact Stabilization Plant converted to Extended Aeration)

AERATION SECTION
Volume: 170.0 m^3

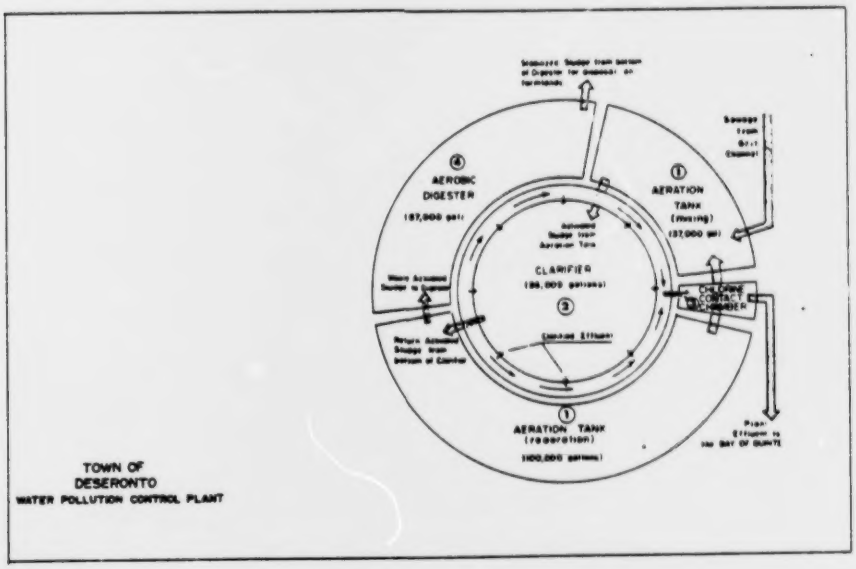
REARATION SECTION
Volume: 453.7 m^3
Detention (as extended aeration plt) 11 hours

AEROBIC DIGESTER
Volume: 306.4 m^3
Airlift - Return sludge: 26.5 l/s
- Waste sludge: 15.9 l/s
Blowers: 3 SUTORBIET
Size: 179.70 l/s @ 55.58 kPa

SEDIMENTATION SECTION
Volume: 392.5 m^3 Detention: 6.9 hours
Surface overflow rate: 16.1 $m^3/m^2.d$

CHLORINE CONTACT CHAMBER
Volume: 28.2 m^3 Detention: 30 min.

OUTFALL
152.4m long - 457.2 mm dia. pipe



TOWN OF
DESERONTO
WATER POLLUTION CONTROL PLANT

DESIGN DATA - IMPERIAL

Project: Town of Deseronto WPCP
Project No: 1-0010-66
Design Flow: 0.3 MGD
BOD: Raw Sewage 197 mg/l
Removal 90%
SS: Raw Sewage 224 mg/l
Population: 2800

PUMPING STATION (at Plant)
2, Raw sewage pumps
Size: 416 IGPM at 23' TDH

GRIT REMOVAL:
Type: 2 manually cleaned channels
Size: 1'6" x 20' x 2' swd
Volume: 786 I. Gal. Detention: 3.8 min.

COMMINUTION:
One, Type: QU250 Design: 696 IGPM

SCREENING:
Bar screen with $\frac{1}{4}$" bars on 2" centres.

BIOLOGICAL TREATMENT
(Napanee Industries Plant)
(Contact Stabilization Plant converted to Extended Aeration)

AERATION SECTION:
Volume: 37, 400 I. Gal

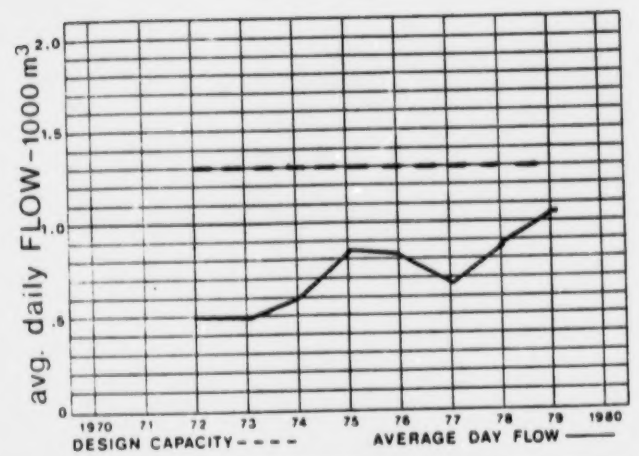
REARATION SECTION:
Volume: 99, 800 I. Gal.
Detention (as extended aeration plt) 11 hours

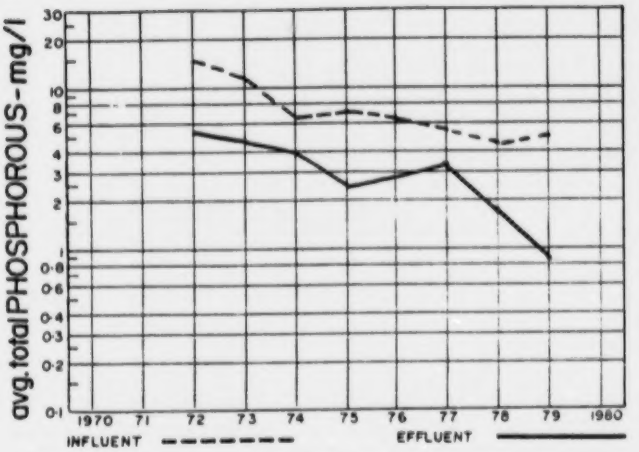
AEROBIC DIGESTER:
Volume: 67, 400 I. Gal.
Airlift - Return sludge: 350 IGPM
- Waste sludge: 210 IGPM
Blowers: 3, SUTORBILT
Size: 430 SCFM at 8 psi

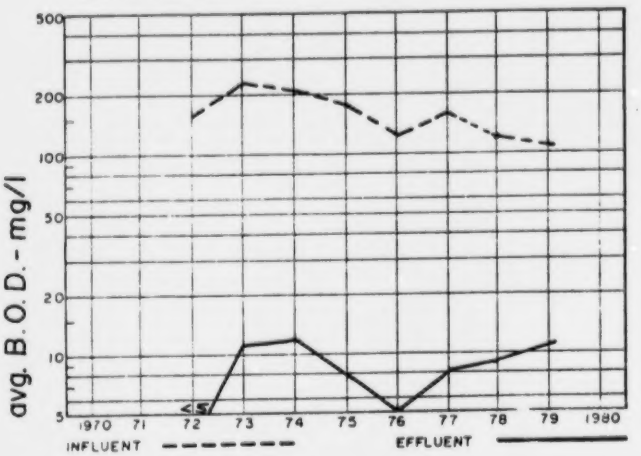
SEDIMENTATION SECTION:
Volume: 86, 350 I. Gal. Detention: 6.9 hours
Surface overflow rate: 330 gal/ft ^{2}/day

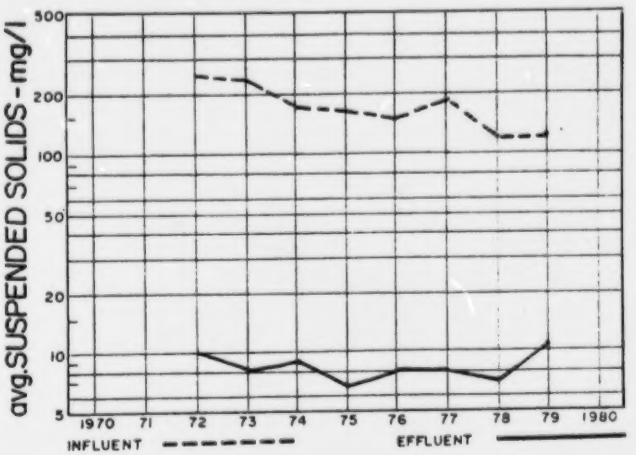
CHLORINE CONTACT CHAMBER:
Volume 6300 I. Gal Detention: 30 min.

OUTFALL
500' 18" dia. pipe









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110000980 DESERONTO W P C P

MUNICIPALITY : DESERONTO
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION	1,751
POPULATION SERVED	2,800
PERCENT SERVED	159.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.383 1000 M3 DESIGN BOD5 : 197.0 MG/L DESIGN SUSP.SOLIDS : 224.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	31.190	1.006	1.591	1.591	88.0	8.0	90	2.4	75.0	6.5	91	2.1	3.9	.8	79	.097
FEB	25.480	.910	1.591	1.591	120.0	8.0	93	2.8	78.0	4.0	94	1.8	3.5	2.0	42	.038
MAR	43.155	1.392	2.937		96.0	30.0	68	2.8	308.0	33.0	89	11.8	6.2	2.3	62	.168
APR	36.840	1.228			82.0	10.0	87	2.6	85.0	10.0	88	2.7	4.5	1.5	66	.111
MAY	28.185	.909			231.0	15.0	93	6.0	143.0	9.0	93	3.7	5.6	1.0	82	.130
JUN	27.400	.913			126.0	5.0	96	3.3	170.0	7.0	95	4.4	7.7	.3	96	.203
JUL	22.530	.730	.918	.918	52.0	7.0	86	1.0	108.0	6.0	94	2.2	4.8	.9	81	.088
AUG	25.980	.840	1.100	1.100	140.0	9.0	93	3.4	185.0	8.0	95	4.5	5.1	.3	94	.125
SEP	27.790	.930	1.980	1.980	110.0	8.0	92	2.8	135.0	8.0	94	3.5	5.4	.5	90	.136
OCT	34.220	1.060	1.190	1.190	74.0	8.0	89	2.2	95.0	9.0	90	2.9	4.5	.2	95	.147
NOV	32.750	1.090	2.180	2.180	78.0	9.0	88	2.2	58.0	9.0	84	1.6	5.8	.9	84	.160
DEC	42.050	1.370	2.630	2.630	80.0	8.0	90	3.0	107.0	13.0	87	3.9	4.9	.5	89	.185
TOTAL	377.570							35.0				45.8				1.588
AVERAGE		1.032			106.4	4	90		128.9	10.2	92		5.1	.9	81	
MAXIMUM			2.937	2.630												
NO. OF SAMPLES					32	32			32	32			29	32		

DESIGN DATA - METRIC

EGANVILLE

PROJECT Village of Eganville WPCP
PROJECT NO. 1-0007-66

TREATMENT Extended Aeration

DESIGN FLOW 0.76 $10^3 m^3/d$

BOD - Raw Sewage
- Domestic 182 mg/l
- Creamery 154 mg/l

Removal 80%

PRIMARY TREATMENT

Grit Removal

Type: Parallel channels, manually cleaned
Size: Two 5.3m x .4m

SCREENING

Type: Manually cleaned
Size 3.2cm openings

COMMINUTION

Type: Aero-Flow Type A-12

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air
Size: 379.1 m^3
Retention: 12 hours

Air Supply

Type: Dresser type RAI
Size: Three-142.1 l/s @ 48.3 kPa

SECONDARY SEDIMENTATION

Size: 7.8m dia x 4.6m (170.5m^3)
Retention: 5.3 hours
Loading: Surface 19.0 $m^3/m^2 \cdot d$
Weir: 17.4$m^3/m \cdot d$

CHLORINATION

Type: Wallace & Tiernan Type 831
Size: 9.1 kg/d

Chlorine Contact Chamber

Size: 17.7.m^3
Retention: 30 minutes

OUTFALL

- to Bonnechere River

SLUDGE HANDLING

Digestion System

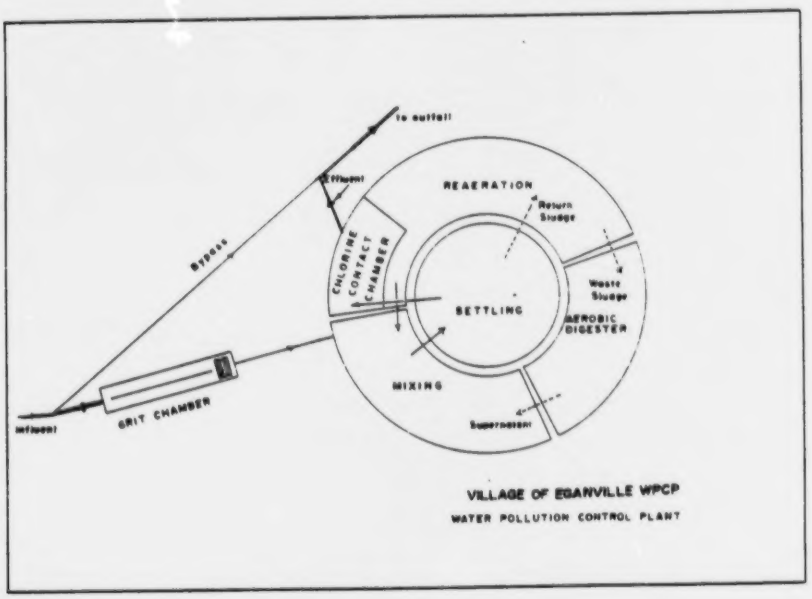
Type: Aerobic
Size: 254.6 m^3

PUMPING STATIONS

North Side
Two Flygt Model CP-3100, 22.1 L/s @ 10.7m TDH

Water Street

Two Flygt Model CP-3100, 9.5 L/s @ 7.6m TDH



DESIGN DATA - IMPERIAL

PROJECT NO. 1-0007-66

TREATMENT Extended Aeration

DESIGN FLOW 0.168 migd

BOD - Raw Sewage
- Domestic 182 mg/l
- Creamery 154 mg/l

Removal 80%

PRIMARY TREATMENT

Grit Removal

Type: Parallel channels, manually cleaned
Size: Two 17'4" x 1'2"

SCREENING

Type: Manually cleaned
Size: 1¼" openings

COMMINUTION

Type: Aer-o-Flow Type A-12

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air
Size: 83, 400 gal
Retention: 12 hours

Air Supply

Type: Dresser type RAI
Size: Three-340 scfm @ 7 psi

SECONDARY SEDIMENTATION

Size: 25'8" dia x 15' (37, 500 gal)
Retention: 5.3 hours
Loading: Surface 385 gal/ft^2/day
Weir: 1170 gal/ft/day

CHLORINATION

Type: Wallace & Tiernan Type 831
Size: 20 lbs/day

Chlorine Contact Chamber

Size: 3900 gal
Retention: 30 minutes

OUTFALL

- to Bonnechere River

SLUDGE HANDLING

Digestion System

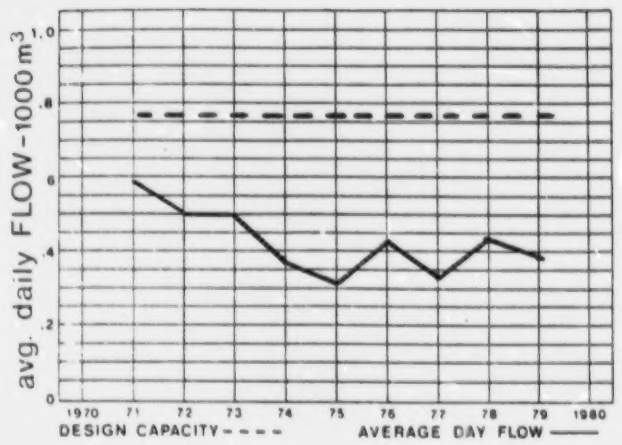
Type: Aerobic
Size: 56, 000 gal

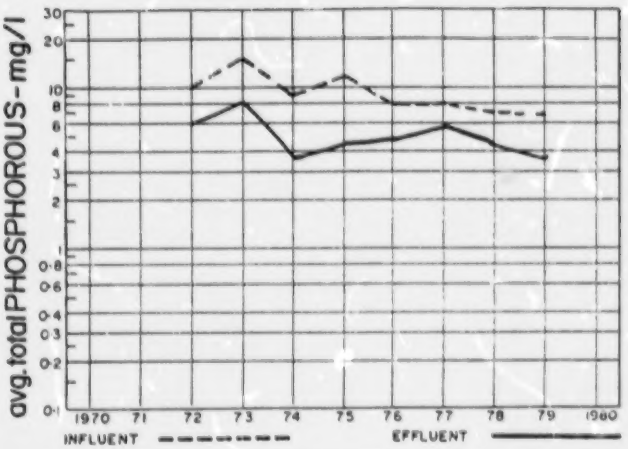
PUMPING STATIONS

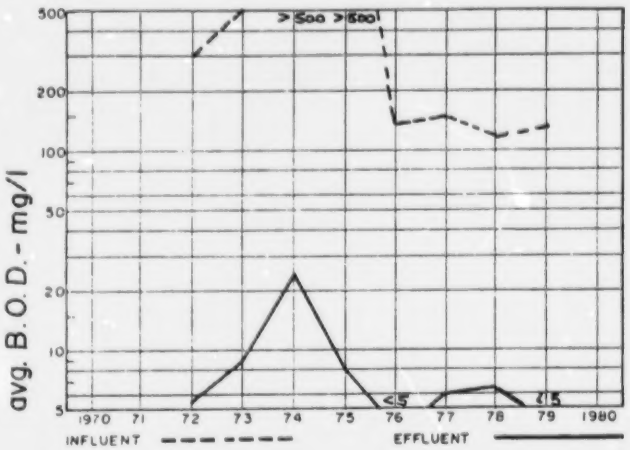
North Side
Two Flygt Model CP-3100, 350 US gpm @ 35' TDH

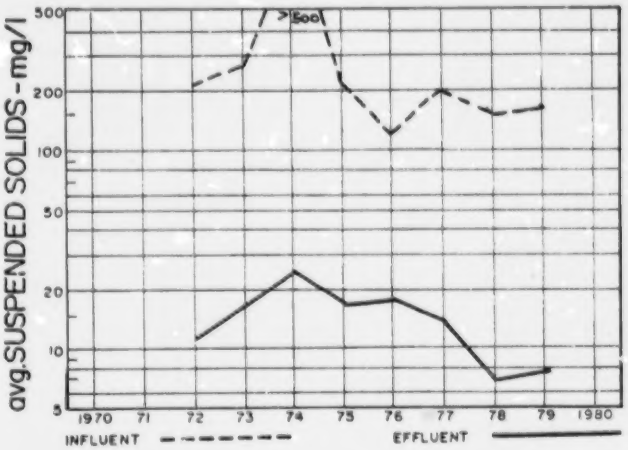
Water Street

Two Flygt Model CP-3100, 150 US gpm @ 25' TDH









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000141 EGANVILLE WPCP

MUNICIPALITY : EGANVILLE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 1,307
POPULATION SERVED : 1,292
PERCENT SERVED : 98.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.783 1000 M3 DESIGN BODS : 182.0 MG/L DESIGN SUSP.SOLIDS : 154.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	8.546	.276	.345	.900	225.0	3.2	98	1.8	195.0	4.0	97	1.6	8.7	5.1	41	.031
FEB	8.674	.310	.355	4.773	95.0	10.0	89	.7	90.0	10.0	88	.6	6.1	4.7	22	.012
MAR	15.908	.513	.873	1.600	210.0	10.0	95	3.1	198.0	6.5	96	3.0	8.7	3.4	60	.084
APR	19.321	.644	.748	1.450	90.0	6.0	93	1.6	175.0	14.0	92	3.1	4.6	2.3	50	.044
MAY	15.565	.502	.547	1.350	102.0	3.3	96	1.5	153.0	8.5	94	2.2	5.7	1.8	68	.061
JUN	11.581	.386	.484	1.100	94.5	3.3	96	1.0	137.5	6.5	95	1.5	6.4	4.4	31	.023
JUL	9.835	.317	.447	.900	97.0	4.4	95	.9	255.0	5.0	98	2.4	9.4	4.8	48	.045
AUG	10.129	.327	.426	.900	177.0	5.0	97	1.7	260.0	5.0	98	2.5	6.3	3.2	49	.031
SEP	9.152	.305	.359	1.000	183.0	2.0	98	1.6	168.0	9.0	94	1.4	8.0	5.3	33	.025
OCT	9.715	.313	.387	1.000	168.0	2.0	98	1.6	228.0	9.5	95	2.1	7.5	3.5	53	.039
NOV	9.459	.315	.396	.900	148.0	3.5	97	1.3	133.0	5.0	96	1.2	6.5	4.1	36	.023
DEC	11.082	.374	.476	1.200	118.0	1.8	98	1.2	83.0	10.0	87	.8	5.5	4.4	20	.012
TOTAL	138.965							18.6				22.8				.430
AVERAGE		.382			142.2	4.5	96		172.5	7.7	95		6.9	3.9	43	
MAXIMUN			.873	4.773												
NO. OF SAMPLES					24	24			24	24			24	24		

DESIGN DATA - METRIC

ERNESTOWN (ODESSA)

PROJECT: Ernestown Twp. (Odessa) WPCP

PROJECT NO: 1-0177-68

TREATMENT: Extended Aeration

DESIGN FLOW: 0.909 $10^3 m^3/d$

PUMPING STATION

Three Midland ABS Model AFP-0010 101.6 mm submersible pumps each rates at 22.7 l/s @ 11.9 m TDH with 210 mm. impeller, at 30.3 l/s @ 13.1 m TDH with 220 mm. impeller.

PRIMARY TREATMENT

Grit Removal

See: Two, Grit Channels 0.46 m wide 6.1 m long with proportional weirs.

Comminution

Type: One, BIF Waste Disintegrator

SECONDARY TREATMENT

Aeration Tank

Size: One 21.3 m x 9.1 m x 4.6 m SWD
Volume: 892.1 m^3
Loading: 0.62 kg BOD/ m^3
Two, 5.6 KW lighting aerators

Clarifier

Size: One, 18.3 m x 5.8 m with upflow of 32.2 $m^3/m^2.d$ @ peak flow of 3.4 x $10^3 m^3/d$

CHEMICAL TREATMENT

Chlorination

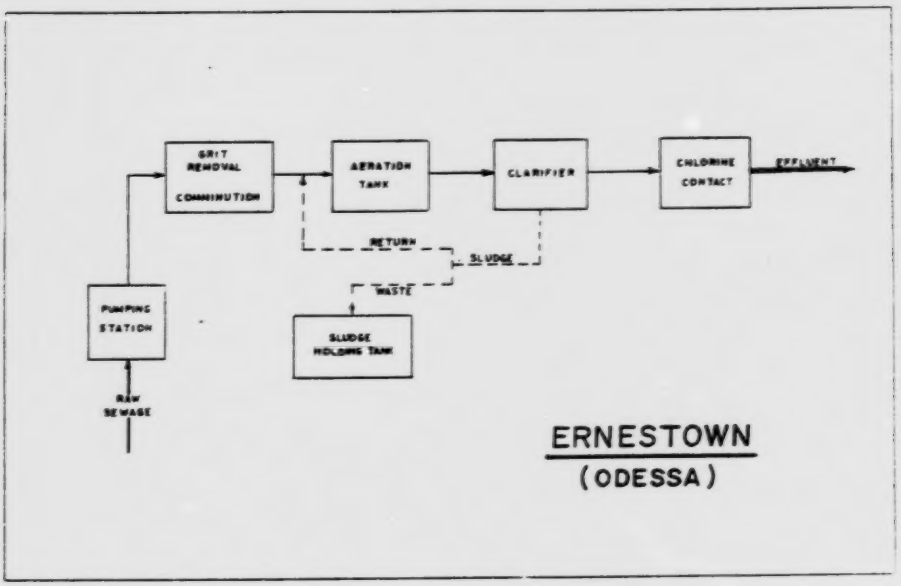
Chlorine contact tank - 30 min. detention time at avg. flow, with clorinator pump.

Phosphorus Removal

SLUDGE HANDLING

Sludge Handling Tank

28.3 m^3 providing 0.014 m^3 per person served.



DESIGN DATA - IMPERIAL

PROJECT Ernestown Twp. (Odessa) W.P.C.P.

PROJECT NO. 1-0177-68

TREATMENT Extended Aeration

DESIGN FLOW 0.2 MIGD

PUMPING STATION

Three Midland ABS Model AFP-0010 4" submersible pumps each rated at 300 IGPM @ 39' TDH with 210 mm. impeller, at 400 IGPM @ 43' TDH with 220 mm. impeller.

PRIMARY TREATMENT

Grit Removal

Two, Grit Channels 1.5' wide x 20' long with proportional weirs.

Comminution

One, BIF Waste Disintegrator

SECONDARY TREATMENT

Aeration Tank

One 70' x 30' x 15' SWD
31500 Cu. Ft. (0.196 MIG)
Loading - 13 lb. BOD/1000 Cu. Ft.
Two, 7.5 Hp lighting aerators.

Clarifier

One, 60' x 19' with upflow of 658 IGPD/ft^2 @ peak flow of 0.75 MIGD

CHEMICAL TREATMENT

Chlorination

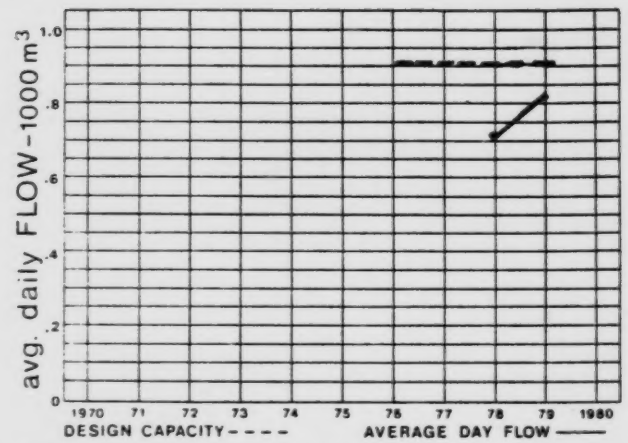
Chlorine contact tank - 30 min. detention time at avg. flow, with chlorinator pump.

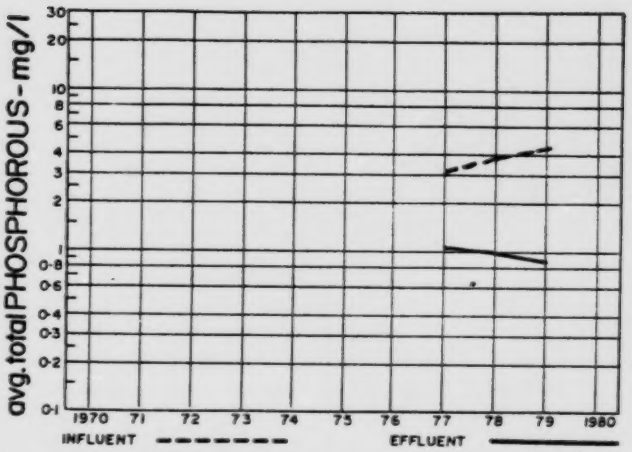
Phosphorus Removal

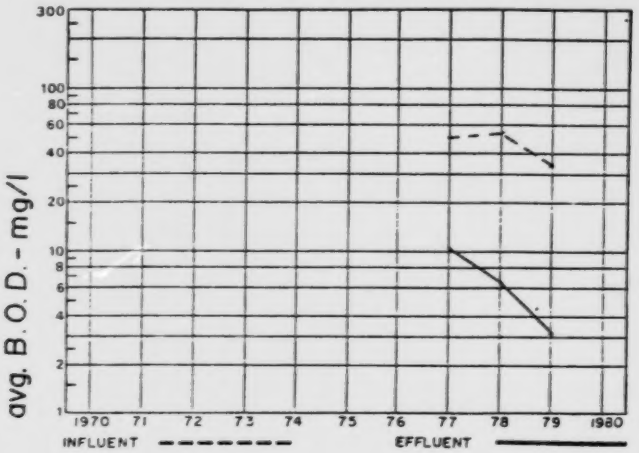
SLUDGE HANDLING

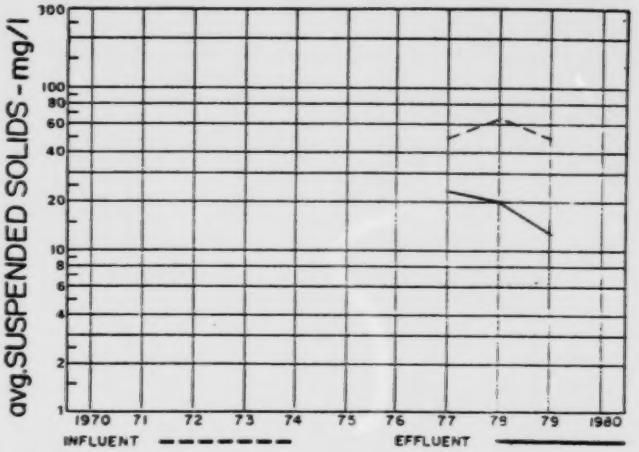
Sludge Holding Tank

1000 Cu. Ft. providing 0.5 Cu. Ft. per person served.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002041 ODESSA M P C P

MUNICIPALITY : ERNESTOWN (ODESSA)
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY - EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 11,211
POPULATION SERVED : 1,600
PERCENT SERVED : 14.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	26.476	.854	1.205	2.273	20.0	2.9	85	.4	49.0	20.3	58	.7	3.2	1.0	68	.058
FEB	20.239	.729	.768		30.0	5.3	82	.5	55.0	23.5	57	.6	6.8	1.1	83	.115
MAR	*	*			19.0	8.5	55		16.0	5.5	65		7.3	.5	93	
APR	40.340	1.344	2.273	2.273	21.5	4.0	81	.7	40.0	23.0	42	.6	2.2	.8	60	.053
MAY	17.550	.570			50.0	1.3	97	.8	73.0	9.0	87	1.1	4.4	1.5	65	.051
JUN	19.531	.650	2.373		45.0	.5	98	.8	44.0	6.9	85	.7	4.2	.6	84	.069
JUL	12.805	.410			73.0	1.8	97	.9	105.0	8.0	92	1.2	5.6	1.3	75	.055
AUG	12.590	.600			*	*			*	*			*	*		
SEP	21.456	.715			18.0				35.0				2.0			
OCT	27.798	.897			31.0	2.0	93	.8	50.0	11.5	77	1.0	3.9	1.3	66	.073
NOV	28.885	.963			68.5	3.2	95	1.8	95.0	23.5	75	2.0	3.6	.8	75	.072
DEC	33.652	1.085			16.0	1.5	90	.4	25.0	17.5	30	.2	1.8	.6	65	.039
TOTAL	261.322							7.4				8.5				.592
AVERAGE		.802			35.6	3.1	91		53.3	14.8	72		4.1	.9	75	
MAXIMUM			2.373	2.273												
NO. OF SAMPLES					22	21			22	21			22	21		

DESIGN DATA - METRIC

FRANKFORD

PROJECT VILLAGE OF FRANKFORD

PROJECT NO. 1-0132-67
TREATMENT Contact Stabilization
DESIGN FLOW $1.4 \times 10^3 m^3/d$
DESIGN POPULATION 3000

BOD Loading: 170 mg/l

SS Loading: 200 mg/l

PUMPING STATIONS

No. 1 - 2 submersible pumps (1 standby) @ 18.9 l/s and 6.7 kW each

No. 2 - 2 submersible pumps (1 standby) @ 6.3 l/s and 1.9 kW each

No. 3 - 2 submersible pumps @ 15.1 l/s and 5.6 kW each.

PRETREATMENT

Grit Removal

2 channels 7.3m x .6m x .9m deep each

Comminution

One 0.95 cm mechanically cleaned comminutor rated at $7.6 \times 10^4 m^3/d$

SECONDARY TREATMENT

Aeration Tank

Mixing Volume: $117.4m^3$
Reaeration Volume: $297.0m^3$

Clarifier

Volume: $442.6m^3$

Air Supply:

2 blowers @ 45.5 kW

TERTIARY TREATMENT

Phosphorous Removal

22.7m3 storage tank

SLUDGE TREATMENT

Aerobic Digester

Two compartments $340.7m^3$

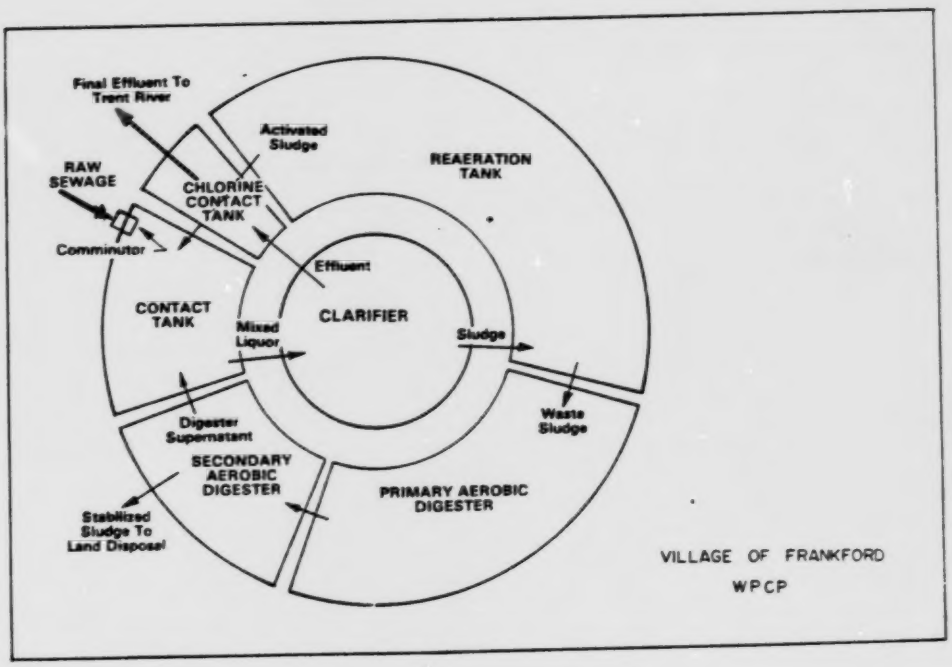
CHLORINATION

Chlorine Contact Chamber

Volume: $34.0m^3$

OUTFALL

To Trent River



DESIGN DATA - IMPERIAL

PROJECT VILLAGE OF FRANKFORD

PROJECT NO. 1-0132-67
TREATMENT
DESIGN FLOW 0.3 mgd
DESIGN POPULATION 3000

BOD Loading: 170 mg/l

SS Loading: 200 mg/l

PUMPING STATIONS

No.1 -2 submersible pumps (1 standby) @ 250 lgpm and 9 hp. each.

No.2 -2 submersible pumps (1 standby) @ 85 lgpm and 2½ hp. each.

No.3 -2 submersible pumps @ 200 lgpm and 7½ hp. each.

PRETREATMENT

Grit Removal

2 channels 24' X 2' X 3' deep each

Comminution

One 3/8" mechanically cleaned comminutor rated at 1.67 mgd.

SECONDARY TREATMENT

Aeration Tank

Mixing Volume: 4144 ft.^{3}
Reaeration Volume: 10,487 ft.^{3}

Clarifier

Volume: 15,635 ft.^{3}

Air Supply:

2 blowers @ 61 hp.

TERTIARY TREATMENT

Phosphorous Removal

5000 gal. storage tank.

SLUDGE TREATMENT

Aerobic Digester

Two compartments 12,032 ft.^{3}

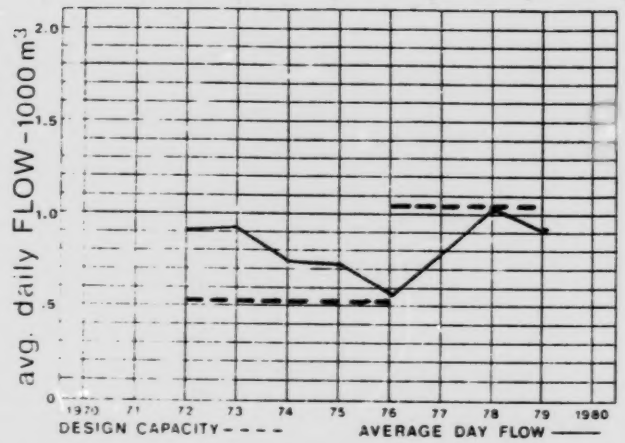
CHLORINATION

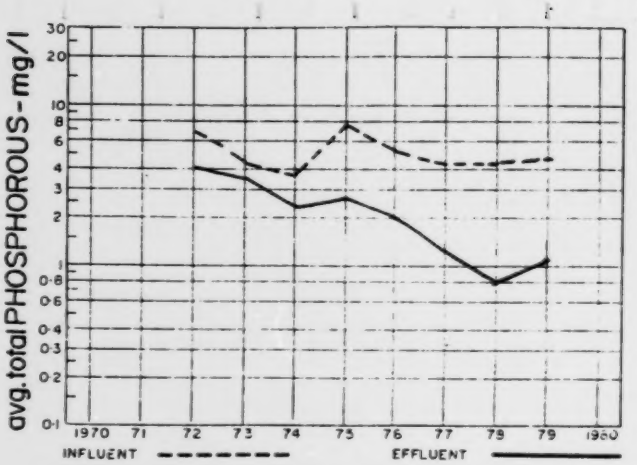
Chlorine Contact Chamber

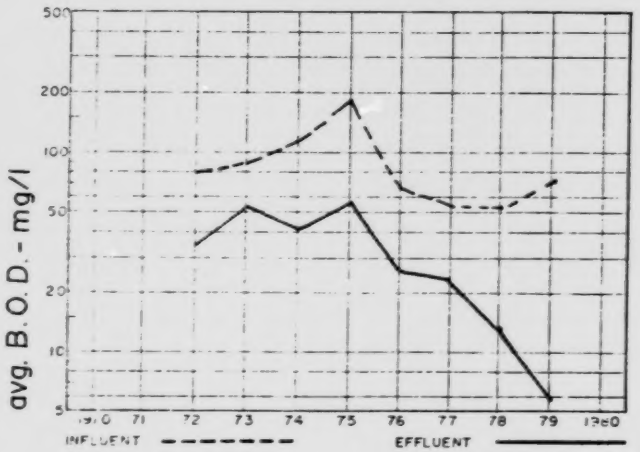
Volume: 1200 ft.^{3}

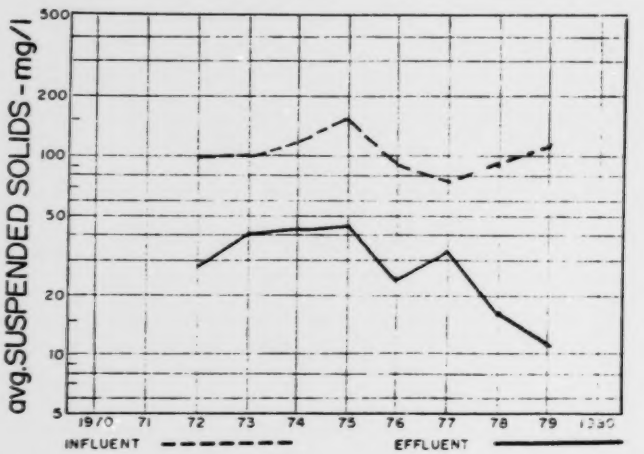
OUTFALL

To Trent River.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110000267 FRANKFORD W P C P

MUNICIPALITY : FRANKFORD
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,872
POPULATION SERVED : 1,900
PERCENT SERVED : 101 4

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.383 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION				REDUCTION				REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	28.331	.914	1.546	2.728	38.0	2.4	93	1.0	64.0	7.2	88	1.6	3.2	.7	78	071
FEB	25.003	.893	1.727	3.546	105.0	21.0	80	2.1	52.0	16 0	69	.9	4.3	1.0	76	.093
MAR	48.550	1.570	3.000	5.360	35.0	18.0	48	.8	52.0	14.0	73	1.8	3.7	.9	75	136
APR	92.716	3.090	8.629	4.846	50.0	17.0	66	3.0	51.1	5.8	88	4.2	4.5	.5	88	.369
MAY	34.651	1.118	1.908	2.879	51.5	4.0	92	1.6	59.0	7.2	87	1.7	4.3	.7	81	.122
JUN	18.698	.623	.855	2.182	94.0	1.8	98	1.7	87.2	18.0	79	1.2	4.9	1.4	70	.066
JUL	14.762	.476	1.298	2.727	81.3	2.1	97	1.1	101.6	9.9	90	1.3	5.1	1.9	62	.047
AUG	13.566	.437	.475	1.636	130.0	3.0	97	1.7	130.0	20.7	84	1.4	5.7	2.6	54	042
SEP	12.413	.413	.570	1.727	102.5	1.5	98	1.2	259.0	9.7	96	3.0	5.5	.9	82	056
OCT	15.375	.495	.564	1.454	62.0	2.0	96	.9	93.0	10.3	88	1.2	4.5	.7	84	.058
NOV	25 130	.837	1.058	2.360	80.0	.4	99	2.0	206.5	6 5	96	5.0	4.9	.9	80	.099
DEC	19.000	.613	3.311	3.364	46.0	2.5	94	.8	87.5	11.5	86	1.4	3.7	1.8	51	.036
TOTAL	348.195							18.2				25.3				1.185
AVERAGE		.957			72.9	6.3	91		103.5	11.4	88		4 5	1 1	73	
MAXIMUM			8.629	5.360												
NO. OF SAMPLES					18	16			88	88			86	86		

HAWKESBURY

DESIGN DATA - METRIC

PROJECT: Town of Hawkesbury

PROJECT NO: 1-0131-67

POPULATION: 17,500

TREATMENT: Conventional Activated Sludge

DESIGN FLOW: Dry Weather Flow - 12.14 $10^3 m^3/d$
Wet Weather Flow - 36.37 $10^3 m^3/d$

DESIGN BOD:

DESIGN SS:

PUMPING STATIONS

One pumping station located at Main and Phillippe Street, 3 pumps each 252.4 l/s @ 37.29 kW

PRIMARY TREATMENT

Grit Removal
Screening: Mechanically cleaned
Comminutor:
Detritor: One, 4.9 m x 4.9 m x 0.8 m deep
Primary Settling Tank: settling rate - 70.40 $m^3/m^2 \cdot d$

SECONDARY TREATMENT

Aeration Tank

Size: Three, 25.0 m x 7.3 m x 4.6 m deep
Max. Flow: 24.23 $10^3 m^3/d$
Loading: 13.6 kg. BOD / 28.32 m^3
Return Activated Sludge Flow: 12.14 $10^3 m^3/d$

BLOWERS

Size: Two @ 1254 l/s, 112 kW for aeration tanks
Two @ 1254 l/s, 93 kW for aerobic digesters

FINAL SETTLING TANK

Size: Three, 41.1 m x [illegible] m x 3.05 m deep
Rate: 58.67 $m^3/m^2/d$

CHLORINATION

Chlorine Contact Chamber
Gas clorinator capacity: 31.55 kg
Detention: 15 min. in tank and outfall

PHOSPHORUS REMOVAL

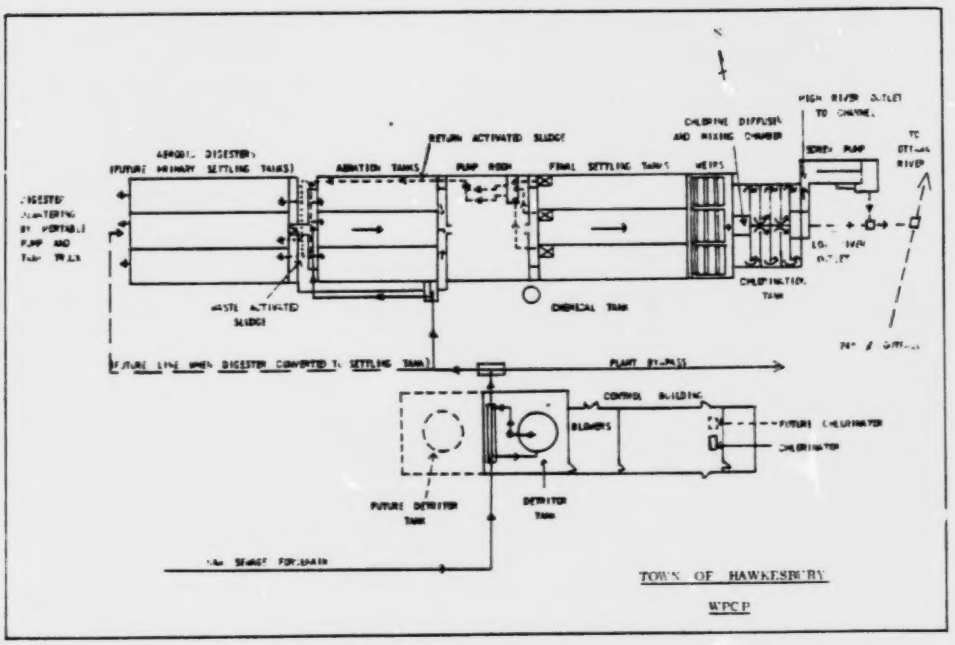
Chemical Storage Tank Size: 22.73 m^3
Pumps: Two chemical feed pumps @ 1.77 l/s each

AEROBIC DIGESTERS
(Future primary clarifiers)

Size: Three 34.1 m x 7.2 m x 3.7 m
Volume: 2731 m^3
Storage: approx. 70 days

OUTFALL

Size: 370.6 m of 610 mm dia. concrete pipe
- To Ottawa River



TOWN OF HAWKESBURY

WPCP

HAWKESBURY

DESIGN DATA - IMPERIAL

PROJECT: Town of Hawkesbury

PROJECT NO: 1-0131-67

POPULATION: 17,500

TREATMENT: Conventional Activated Sludge

DESIGN FLOW: Dry Weather Flow - 2.67 MIGD
Wet Weather Flow - 8.00 MIGD

DESIGN BOD:
DESIGN SS:

PUMPING STATIONS

One pumping station located at Main and Phillippe Street, 3 pumps each 4,000 us gpm @ 50 HP

PRIMARY TREATMENT

Grit Removal
Screening: mechanically cleaned
Comminutor:
Detritor: One, 16' x 16' x 2'9" deep
Primary Settling Tank: settling rate - 1200 us GPD/ 2ft.

SECONDARY TREATMENT

AERATION TANK
Size: Three, 82' x 24' x 15' deep
Max. Flow: 5.33 MIGD
Return Activated Sludge Flow: 2.67 MIGD
Loading: 30 lbs. BOD/100 cu. ft.

BLOWERS

Size: Two @ 3000 scfm, 150 Hp for aeration tanks
Two @ 3000 scfm, 125 Hp for aerobic digesters

FINAL SETTLING TANK

Size: Three, 135' x 24' x 10' deep
Rate: 1,000 US gpd/sq.ft.

CHLORINATION

Chlorine Contact Chamber
Gas clorinator capacity: 500 lb
Detention: 15 min. in tank and outfall

PHOSPHORUS REMOVAL

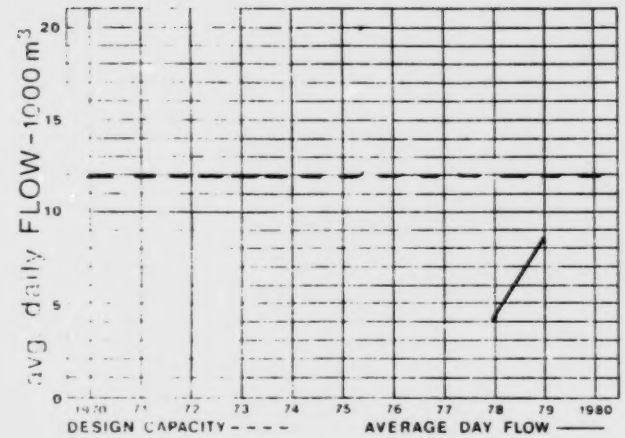
Chemical Storage Tank Size: 5000 gal
Pumps: Two chemical feed pumps @ 2F US gpm each

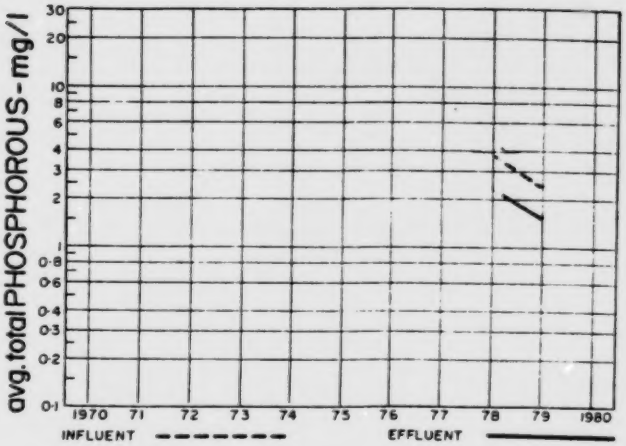
AEROBIC DIGESTERS
(Future primary clarifiers)

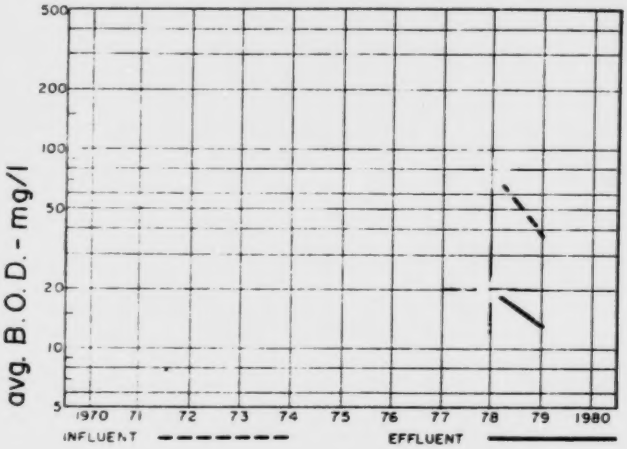
Size: Three, 112' x 24' x 12'
Volume: 96,500 cu. ft.
Storage: approx. 70 days

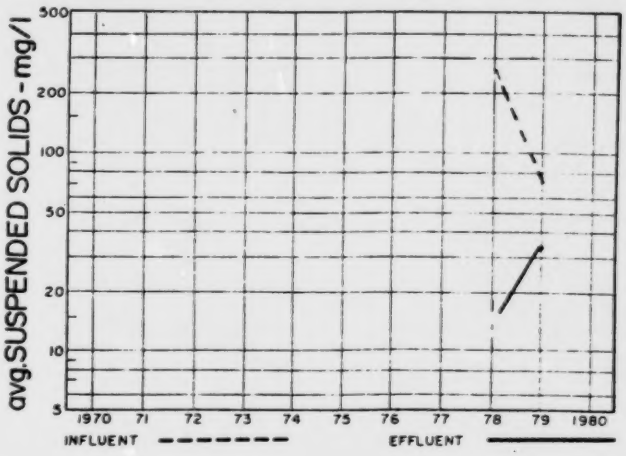
OUTFALL

Size: 1216' of 24" dia concrete pipe
- To Ottawa River









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110002283 HAWKESBURY WPCP

MUNICIPALITY HAWKESBURY **
REGION 04 SOUTHEASTERN

TREATMENT FACILITY EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION 9,804
POPULATION SERVED 9,700
PERCENT SERVED 98 9

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 12.274 1000 M3 DESIGN BODS : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION				REDUCTION				REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	206 111	6 649	10 856		5 0	3.0	40	4	26 0	16 0	38	2 0	.8	.8		
FEB	178 358	6 370	7 490		36.0	16 0	55	3.5	72 0	19.0	73	9 4	3 7	1 7	54	357
MAR	459 060	14 808	25.307		32.0	30.0	6	9	78.0	30 0	61	22.0	1 9	1 2	36	321
APR	346.500	11 550	23.700		71.0	25.0	64	15.9	190.0	45.0	76	50.2	3.3	1.3	60	693
MAY	222 000	7 161	12.820		41.0	15.0	63	5.7	53.0	34.0	35	4 2	2 3	1 8	21	111
JUN	202 890	6 760	10 400		58 0	21.0	63	7.5	90.0	80.0	11	2 0	3 8	4 3	-	-
JUL	224 430	7 240	11 750		24 0	8.0	66	3 5	63 0	22.0	65	9.2	3.2	2 7	15	117
AUG	250 299	8 073	19 030		37 0	7 0	81	7 5	45 0	23 0	48	5 5	1 9	1 1	42	205
SEP	246 357	8 212	13 226		26.0	6.0	76	4 1	45 0	15.0	66	7.3	2 3	1.7	26	148
OCT	232 385	7 496	9.394		54.0	7.0	87	10 9	48.0	27.0	43	4.8	2.8	7	75	488
NOV	225 000	7.498	17.362		63.0	15.1	76	10.7	140.0	31.0	77	24 5	2.9	1.1	62	405
DEC	256 000	8.257	21.255		22.0	10.0	54	3.0	30 0	55.0	-	-	1.4	1 0	28	102
TOTAL	3049 390							74 9				141 5				2 942
AVERAGE		8.340			39 0	13.5	65		73 3	33.0	54		2 5	1 6	36	
MAXIMUM			25.307													
NO. OF SAMPLES					15	13			15	13			10	13		

DESIGN DATA - METRIC

PROJECT: L'Orignal WPCP
PROJECT NO: 1-0025-66
TREATMENT: Extended Aeration
DESIGN FLOW: 0.864 $10^3 m^3/d$

BOD - Raw Sewage - 200 mg/l
- Effluent - 15 mg/l

SS - Raw Sewage - 250 mg/l
- Effluent - 15 mg/l

PUMPING STATION
Pumps: Two, each 35.95 l/s @ 21.9m TDH

GRIT CHANNELS
Size: each 0.46m x 4.88m x 0.305m awd
Volume (each): 0.682 m^3
Retention (each): 1.1 min.

COMMINUTOR
Size: One 254mm

AERATION TANK
Volume: 570.5 m^3
Retention: 15.9 hr.

BLOWERS
Type: Three Roots 76 RAI
Size: Each 451.3 l/s

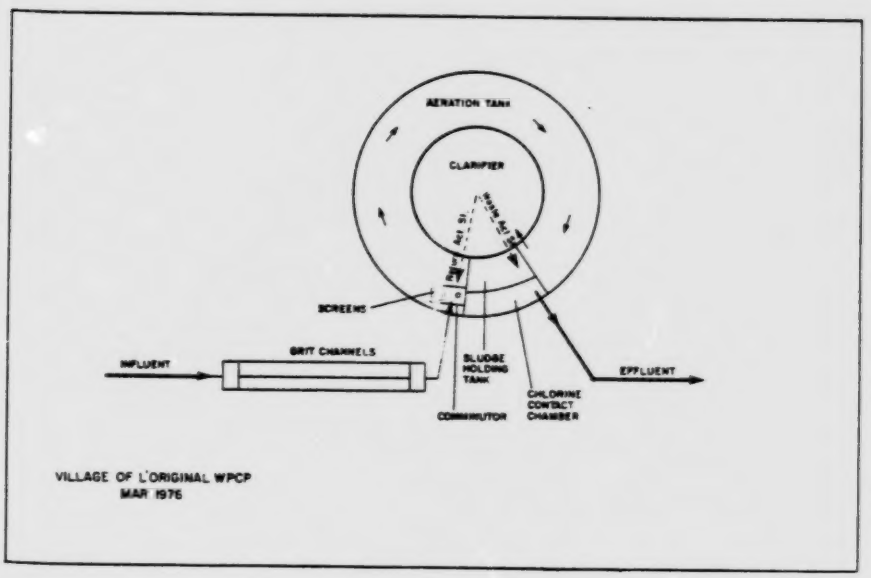
CLARIFIER
Size: 9.14m i.d.
Volume: 301.85 m^3
Loading: Surface 13.15 $m^3/m^2 \cdot d$
Weir 30.11 $m^3/m^2 \cdot d$

L'ORIGNAL

SLUDGE HOLDING TANK
Volume: 29.78 m^3

CHLORINATION TANK
Volume: 19.87 m^3
Reten: 33 min.

CHLORINATOR
Type: One, W and T V800
Size: 22.68 kg/day



VILLAGE OF L'ORIGINAL WPCP
MAR 1976

DESIGN DATA - IMPERIAL

PROJECT: L'Orignal WPCP

PROJECT NO. 1-0025-66

TREATMENT: Extended Aeration

DESIGN FLOW: .190 MIGD

BOD - Raw Sewage - 200 mg/l
- Effluent - 15 mg/l

SS - Raw Sewage - 250 mg/l
- Effluent - 15 mg/l

PUMPING STATION
Pumps: Two, each 475 gpm @72'TDH

GRIT CHANNELS
Size: each 1.5'x16'x1'awd
Volume(each): 150 I.G.
Retention(each.): 1.1 min

COMMINUTOR
Size: One 10-inch

AERATION TANK
Volume: 125,500 I.G.
Retention: 15.9 hr

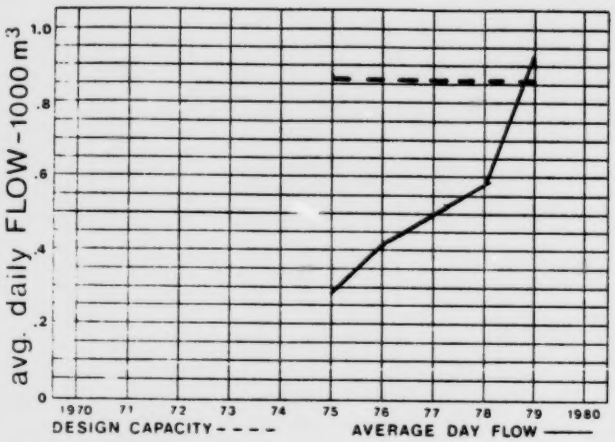
BLOWERS
Type: Three Roots 76 RAI
Size: Each 1000 cfm @ 7 psi

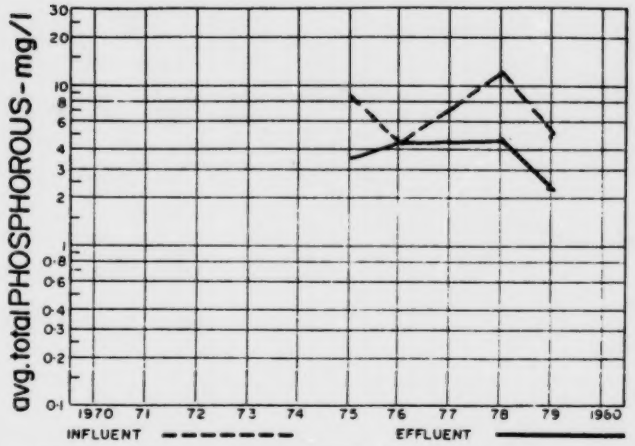
CLARIFIER
Size: 30' i.d.
Volume: 66,400 I.G.
Loading: Surface 249 IG/ft^2/day
Weir 2021 IG/ft /day
Retention: 9.4 hr

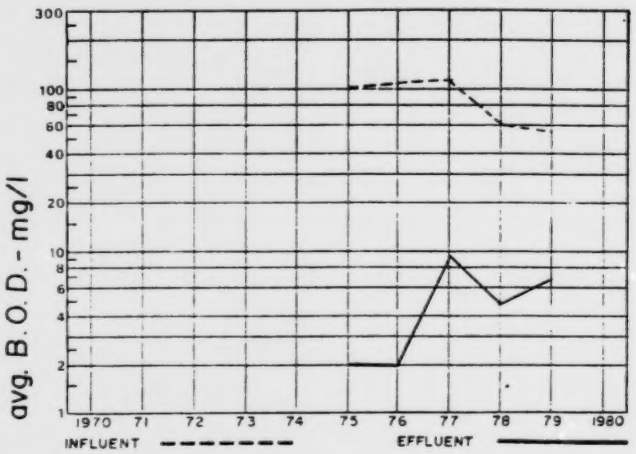
SLUDGE HOLDING TANK
Volume: 6550 I.G.

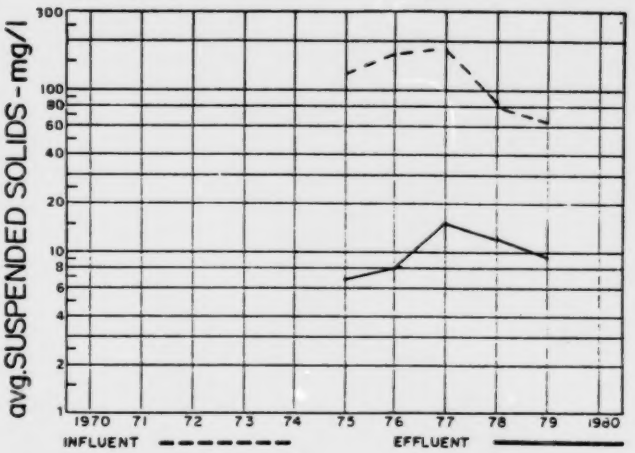
CHLORINATION TANK
Volume: 4370 I.G.
Retention: 33 min

CHLORINATOR
Type: One, W and T V800
Size: 50 lb/day









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001701 LORIGNAL WPCP

MUNICIPALITY : L'ORIGNAL
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

* DATA NOT AVAILABLE

CURRENT POPULATION : 1,453
POPULATION SERVED : 1,200
PERCENT SERVED : 82.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.883 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	28.940	.964	1.395		49.0	1.0	97	1.3	70.0	2.0	97	1.9	2.7	3.1	-	-
FEB	17.166	.613	4.941		48.0	1.8	96	.7	94.0	1.7	98	1.5	3.0	2.6	13	.007
MAR	50.410	1.626	3.102		33.0	12.0	63	1.0	28.0	7.0	75	1.0	2.4	1.1	54	.066
APR	35.080	1.160	2.440		55.0	3.0	94	1.8	110.0	7.0	93	3.6	3.2	1.9	40	.046
MAY	21.241	.685	1.026		73.0	16.8	76	1.1	68.0	7.0	89	1.2	4.6	2.2	52	.051
JUN	18.228	.608	1.988		50.0	30.1	39	.3	85.0	33.5	60	.9	4.7	3.3	29	.026
JUL	14.070	.434	899		110.0	3.3	97	1.5	198.0	5.0	97	2.7	5.6	3.7	33	.027
AUG	14.608	.487	2.247		72.0	2.8	96	1.0	195.0	5.0	97	2.7	7.8	1.0	87	.099
SEP	35.369	1.179	2.749		51.0	*			82.0	*			3.7	*		
OCT	34.594	1.119	1.961		77.0	2.0	97	2.5	76.0	23.5	69	1.8	4.8	3.0	37	.062
NOV	36.045	1.243	2.827		32.0	1.5	95	1.0	62.5	9.0	85	1.9	3.2	2.3	28	.032
DEC	32.877	1.061	2.423		12.0	1.0	91	.3	35.0	6.0	82	.9	10.0	3.1	69	.227
TOTAL	338.628							13.1				20.6				.643
AVERAGE		.932			55.1	6.8	87		91.9	9.7	89		4.6	2.4	48	
MAXIMUM			3.102													
NO. OF SAMPLES					21	17			21	16			21	16		

DESIGN DATA - METRIC

MARMORA

PROJECT: Village of Marmora WPCP

PROJECT NO: 1-0050-66

TREATMENT: Extended Aeration

DESIGN FLOW: 0.87 10^3 m³/d
(1.5 10^3 m³/d operated as step-aeration)

BOD - 200 mg/l

SS - 200 mg/l

PUMPING STATION

Type: Three, Midland AFP-0010
Size: each 28.4 l/s @ 12.5 m TDH

GRIT CHANNELS

(At circumference of plant)
Size: Two, each 6.1 m x .5 m x .2 m awd
Volume: (each) .4
Retention: (each) 0.7 min

COMMINUTOR

Type: Jones and Atwood .10 R

AERATION TANK 1

Volume: 407.3 m^3
Retention: 11.2 hr

AERATION TANK 2

Volume: 505.7 m^3
Retention: 14.0 hr

BLOWERS

Type: Two, Sutorbilt 711-4500

CLARIFIER

Size: 8.2 m i.d. x 3.5 m awd
Volume: 160.0 m^3
Retention: 4.4 hr
Loading: - Surface
- Weir

SLUDGE PUMP

Type: One, Midland AFP-4
Size: 26.8 m^3

CHLORINE CONTACT CHAMBER

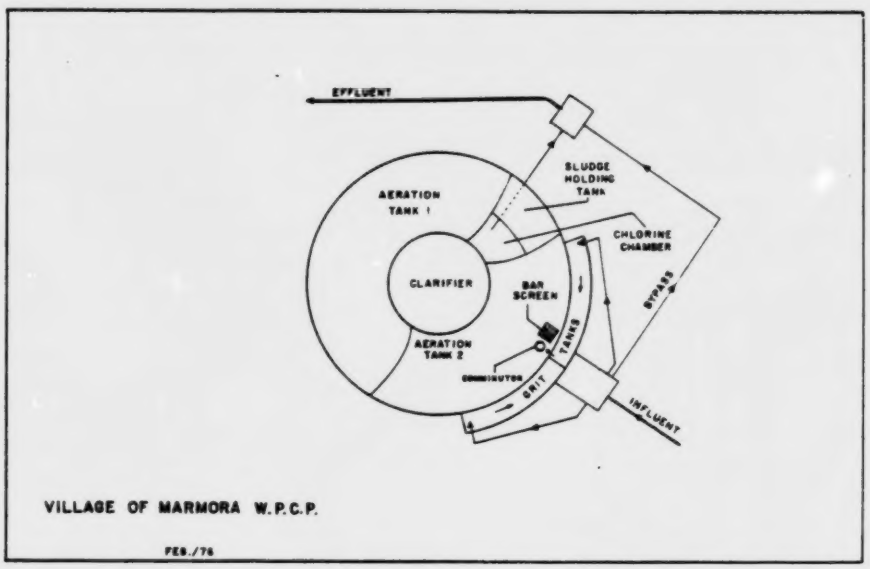
Volume: 41.4 m^3
Retention: 1.1 hr

CHLORINATOR

Type: One F and P 70c

SLUDGE HOLDING TANK

568.25 m^3



DESIGN DATA - IMPERIAL

PROJECT: Village of Marmora WPCP

PROJECT NO: 1-0050-66

TREATMENT: Extended Aeration

DESIGN FLOW: 0.191 mgd
(0.334 mgd operated as step-aeration)

BOD - 200 mg/l

SS - 200 mg/l

PUMPING STATION
Type: Three, Midland AFP-0010
Size: each 450 ugpm @41' TDH

GRIT CHANNELS
(at circumference of plant)
Size: Two, each 20'x 1.5' x 0.5' awd
Volume: (each) 94 IG
Retention: (each) 0.7 min

COMMINUTOR

Type: Jones and Atwood 10 R

AERATION TANK 1
Volume: 89,600 I.G.
Retention: 11.2 hr

AERATION TANK 2
Volume: 111,250 I.G.
Retention: 14.0 hr

BLOWERS
Type: Two, Sutorbilt 711-4500

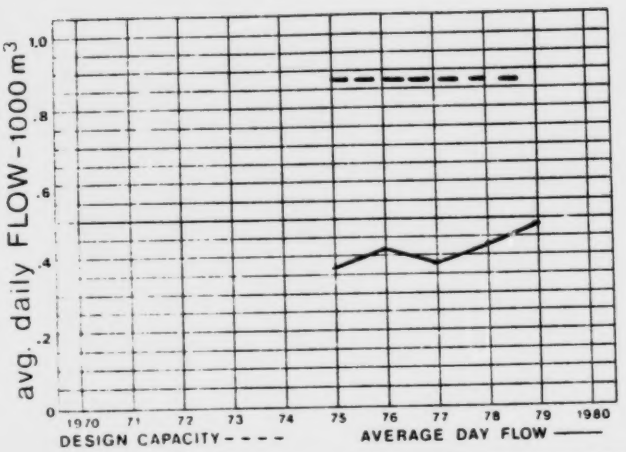
CLARIFIER
Size: 26.8' i.d. x 11.5' awd
Volume: 35188 I.G.
Retention: 4.4 hr
Loading:
- Surface
- Weir

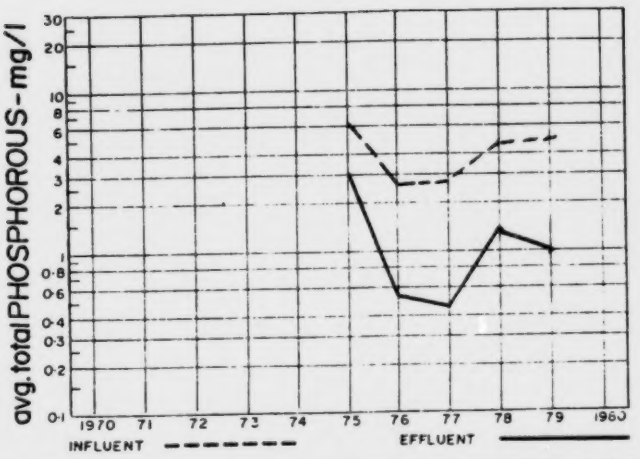
SLUDGE PUMP
Type: One, Midland AFP-4
Size: 425 ugpm

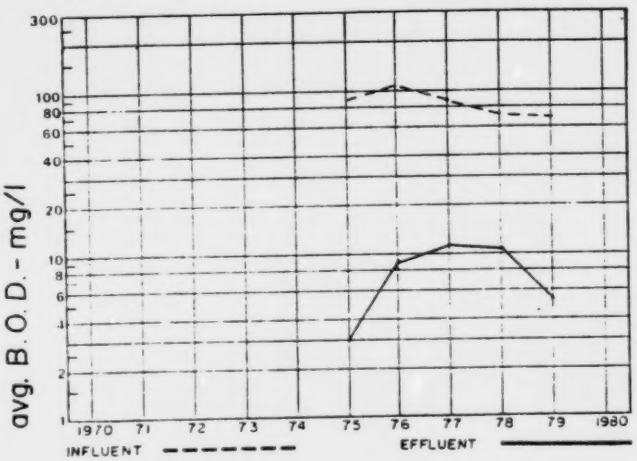
CHLORINE CONTACT CHAMBER
Volume: 9100 I.G.
Retention: 1.1 hr

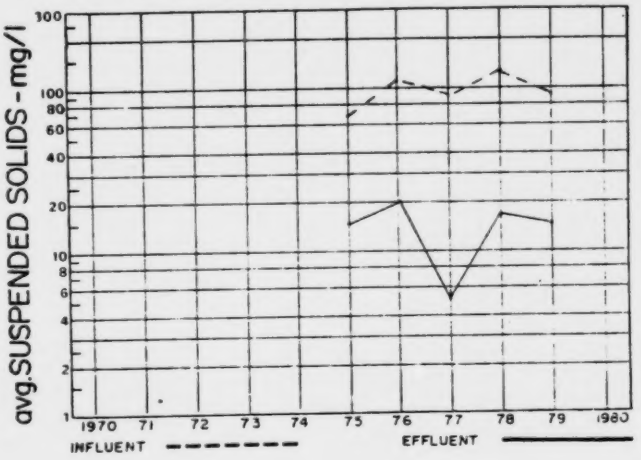
CHLORINATOR
Type: One F and P 70c

SLUDGE HOLDING TANK
12,500 I.G.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001863 MARMORA STP

MUNICIPALITY : MARMORA
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 1,293
POPULATION SERVED : 1,200
PERCENT SERVED : 92.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.888 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	12 233	.395	.755		85.0	2.7	96	1.0	184.0	10.0	94	2.1	4.8	6	87	.051
FEB	10 806	.386	.518		102.0	20.0	80	.8	85.0	45.0	47	4	5.1	1.6	68	.038
MAR	36 599	1.179	1.982		20.0	10.0	50	.3	32.0	10.0	68	8	5.0	1.6	68	.124
APR	25 684	856	1.680		25.5	3.0	88	.5	55.0	10.0	81	1.1	5.6	1.4	75	108
MAY	11 403	.368	.454		23.0	3.4	85	.2	28.0	18.0	35	.1	2.7	1.2	55	.017
JUN	10 133	.338			*	*			*	*			*	*		
JUL	10 681	.344			57.0	7.4	87	.5	120.0	12.0	90	1.1	4.4	.9	79	.037
AUG	9 595	.309			47.0	5.0	89	.4	87.0	10.0	88	.7	3.5	1.0	71	.024
SEP	7 534	.251			90.0	2.5	97	.6	110.0	15.5	85	.7	5.5	4	92	.038
OCT	10 264	.331			118.0	2.0	98	1.1	100.0	8.0	92	.9	5.1	1.1	78	.041
NOV	10 689	.356			100.0	2.0	98	1.0	175.0	22.0	87	1.6	5.2	1.4	73	.041
DEC	16 258	.525			78.0	1.5	98	1.2	123.0	10.0	91	1.8	6.0	.7	88	.086
TOTAL	171 879							8.1				11.6				605
AVERAGE		.470			67.7	5.4	92		99.9	15.5	84		4.8	1.0	77	
MAXIMUM			1.982													
NO. OF SAMPLES					18	17			24	17			45	43		

822

DESIGN DATA - METRIC

PROJECT: Village of Merrickville WPCP

PROJECT NO.: 1-0019-66

TREATMENT: Extended Aeration

DESIGN FLOW: 0.50C $10^3 m^3/d$

BOD - Raw Sewage - 250 mg/l
- Removal 95%

SS - Raw Sewage - 250 mg/l
- Removal 95%

Sewage Pumps (at P.S.)
Size: Two - each 10.6 l/s @ 15.2m TDH
One - 18.2 l/s @ 15.2m TDH

Comminutor
Type: One COMDUX Mod 150

Grit Chamber
(at circumference of aeration tank)
Size: One 6.1m x 4m x 4m (.8 m^3)
Retention: 2.3 min.

MERRICKVILLE

Aeration Tank
Type: One, circular
Size: 12.8m x i.d. x 4.3m swd (550.1 m^3)
Retention: 26.4 hr.

Aeration: Spargers with rotor

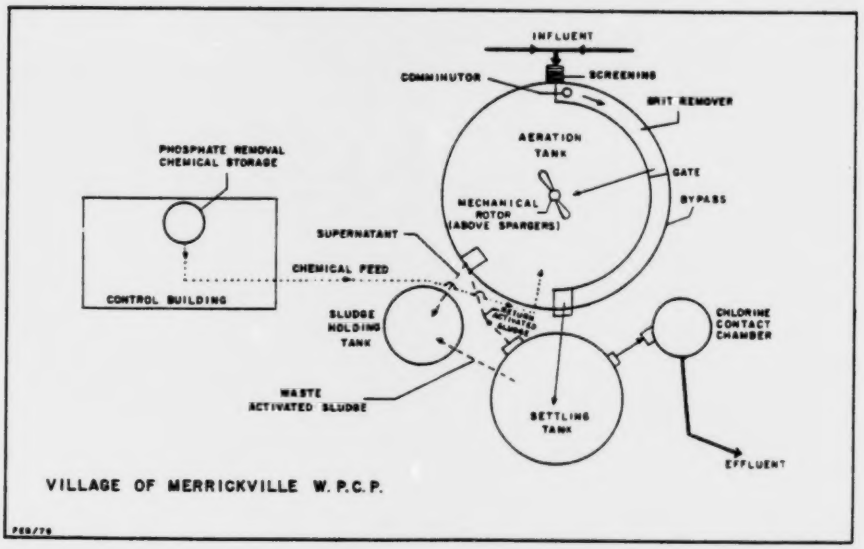
Blowers
Type: Two, SUTORBILT
Size: 110.7 l/s @ 31.0 kPa

Clarifier
Type: One, circular
Size: 6.1m i.d. x 2.7m swd (80.0 m^3)
Retention: 3.8 hr.
Loadings - Weir: 28.8 $m^3/m.d$
- Surface: 17.1 $m^3/m^2.d$

Chlorination Tank
Type: One, circular
Size: 2.3m i.d. x 2.7m swd
Retention: 32 min.

Chlorinator
Type: One, W and T Mod V800

Sludge Holding Tank
Type: One, circular
Size: 3.4m i.d. x 4.0m swd
35.0 m^3.



DESIGN DATA - IMPERIAL

Project: Village of Merrickville WPCP

Project No: 1-0019-66

Treatment: Extended Aeration

Design Flow: 0.110 M.I.G.D.

BOD - Raw Sewage - 250 mg/l
- Removal 95%

SS - Raw Sewage - 250 mg/l
- Removal 95%

Sewage Pumps (at P.S.)
Size: Two, each 140 I.G.P.M. @ 50' TDH
One, 240 I.G.P.M. @ 50' TDH

Comminutor:
Type: One, COMDUX Mod 150

Grit Chamber
(at circumference of aeration tank)

Size: One, 20' x 1.2' x 1.2'
(180 I.G.)
Retention: 2.3 min

Aeration Tank
Type: One, circular
Size: 42' x id x 14' swd
(121,000 I.G.)
Retention: 26.4 hr

Aeration: spargers with rotor

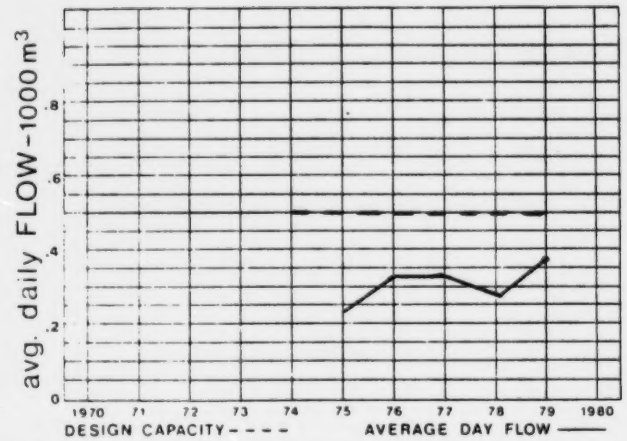
Blowers
Type: Two, SUTORBILT
Size: 265 cfm @ 4.5 psi

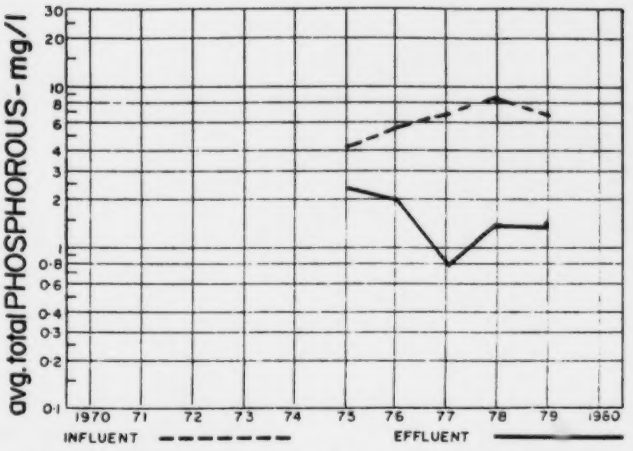
Clarifier
Type: One, circular
Size: 20' i.d. x 9' swd
17,600 I.G.
Retention: 3.8 hr
Loadings - Weir: 1930 I.G./ft/day
- Surface: 350 I.G./ft^2/day

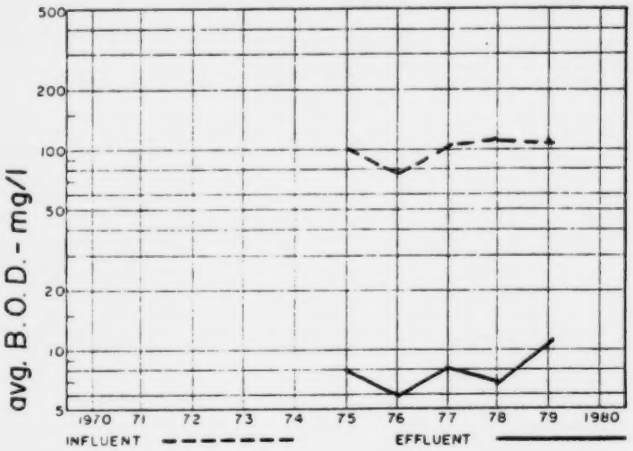
Chlorination Tank
Type: One, circular
Size: 7.5'i.d. x 9' swd
2480 I.G.
Retention: 32 min

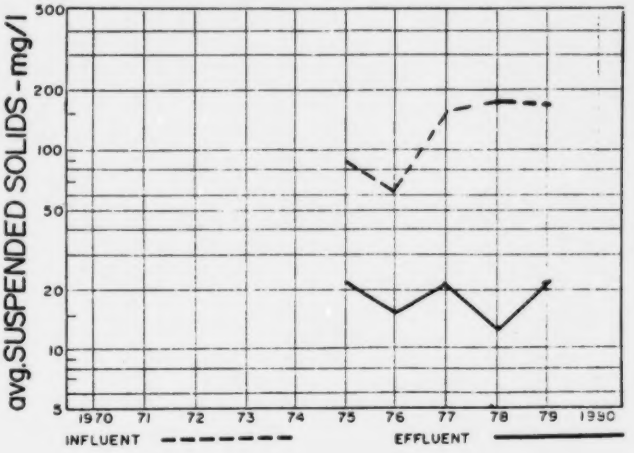
Chlorinator
Type: One, W and T Mod V800

Sludge Holding Tank
Type: One, circular
Size: 11' i.d. x 13' swd
7710 I.G.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001729 MERRICKVILLE WPCP

MUNICIPALITY : MERRICKVILLE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 934
POPULATION SERVED : 600
PERCENT SERVED : 64.2

OPERATING AUTHORITY. MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.500 1000 M3 DESIGN BOD5 : 250.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	7 583	.241	.305	1.055	158.0	30 8	80	.9	141.0	33.5	76	8	8.5	.9	89	.058
FEB	7.096	.253	.427	2.500	81.0	31.0	61	.3	76.0	40.0	47	.2	5.5	4.0	27	.011
MAR	20 552	.663	832	1.632	50.0	13.5	73	.7	55.0	26.0	52	5	3.0	1.9	38	.023
APR	18 084	.603	.777	1.977	55.6	15.3	72	.7	83.3	22.6	72	1.0	4.7	1.5	67	.058
MAY	13 751	.444	.550	1.177	82.5	7.0	91	1.0	103.7	18.7	81	1.1	4.5	1.5	66	.041
JUN	9.069	.302	.425	.955	92.0	5.0	94	.7	100.0	25.5	74	.6	7.1	.6	90	.058
JUL	7 426	.239	426	1.000	79.0	14.6	81	.4	116.6	14.3	87	.7	6.8	1.7	75	038
AUG	8 087	.261	.295	.927	124.2	4 6	96	.9	131.2	11.5	91	9	5.2	2.0	61	.026
SEP	8 155	.272	.456	1.482	152.0	4.2	97	1.2	177 5	41.5	76	1.1	9.5	1.3	86	.067
OCT	8 897	.287	.342	1.418	131.3	2.3	98	1.1	116.3	17.3	85	.8	7.9	.8	89	.063
NOV	9 986	.333	.656	1.114	160.0	2.7	98	1.5	182.0	6.3	96	1.7	7.8	.8	89	070
DEC	19. 164	.618	.976	1.495	81.0	1.5	98	1.5	122.5	6.5	94	2.2	7.0	1.2	82	.112
TOTAL	137.850							11.5				12.3				.625
AVERAGE		.376			103.8	11.0	89		117.1	21.9	81		6.4	1.5	76	
MAXIMUM			.976	2.500												
NO. OF SAMPLES					39	39			39	39			39	39		

DESIGN DATA - METRIC

PITTSBURGH (CANA)

PROJECT Pittsburgh Twp. (Cana)

PROJECT NO. 2-0288-70

TREATMENT Extended Aeration

DESIGN FLOW 0.095 $10^3 m^3/d$

DESIGN POPULATION 250

INFLUENT BOD 190 mg/l
SS 220 mg.l

EFFLUENT BOD 11 mg/l
SS 15 mg/l

PRIMARY TREATMENT

Bar screen and comminutor (Future)

SECONDARY TREATMENT

Aeration Tank:
Volume: 60.88 m^3
Loading: 132.6 kg/m^3 d
Detention: 21 Hours
Blowers: 2 providing 54.33 l/s @ 24.13 kPa

Secondary Sedimentation
Volume: 11.33 m^3
Loading: Surface 14.66m^3/m^2 d
Detention: 4 hours
SLUDGE HANDLING

Digestion System
Type: Aerobic
Volume: 28.82 m^3

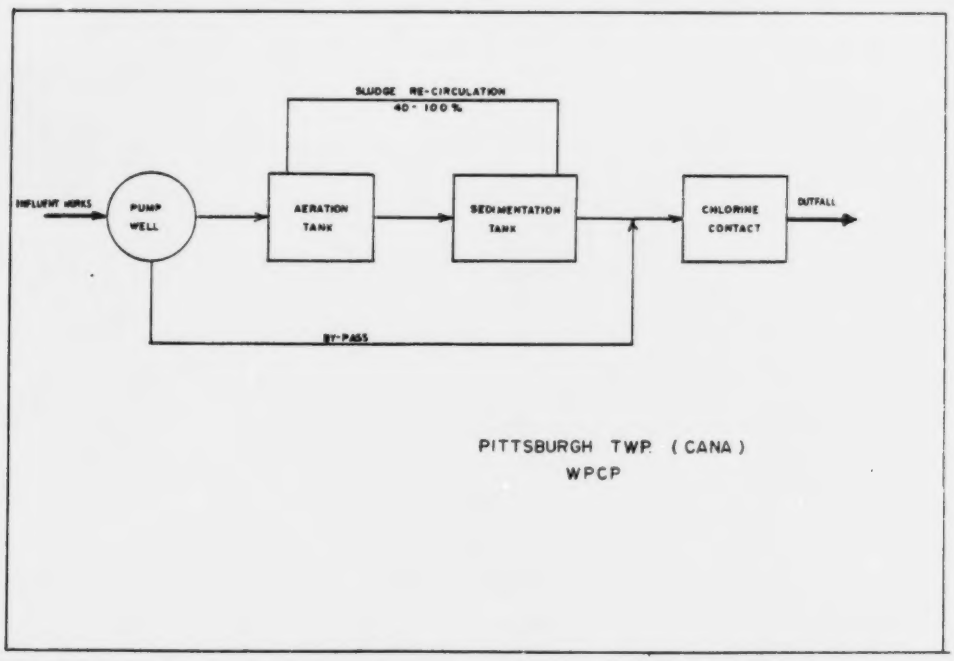
CHLORINATION

Retention: 30 minutes

Pumping Station #1
2 pumps @ 7.57 l/s

Outfall

To Rideau Canal (Cataraqui River).



PITTSBURGH TWP. (CANA)
WPCP

DESIGN DATA - IMPERIAL

PROJECT Pittsburgh Twp (Cana)

PROJECT NO. 2-0288-70
TREATMENT Extended Aeration

DESIGN FLOW 0.021 M I G D

DESIGN POPULATION 250

INFLUENT BOD 190 mg/l
SS 220 mg/l

EFFLUENT BOD 11 mg/l
SS 15 mg/l

PRIMARY TREATMENT

Bar screen and comminutor (Future)

SECONDARY TREATMENT

Aeration Tank:
Volume: 2150 ft^3
Loading: 13 lb. BOD/day/1000 ft^3
Detention: 21 Hours
Blowers: 2 providing 130 cfm @ 3.5 psi.

Secondary Sedimentation:
Volume: 400 ft^3
Detention: 4 hours
Loading: Surface, 300 gal/ft^2/day

SLUDGE HANDLING

Digestion System
Type: Aerobic
Volume: 1000 $ft.^3$

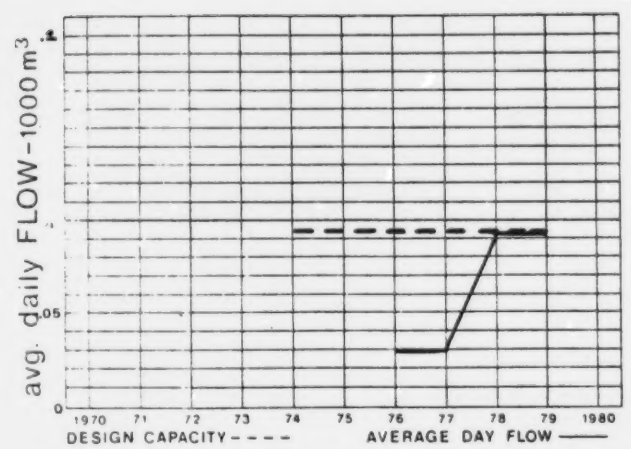
CHLORINATION

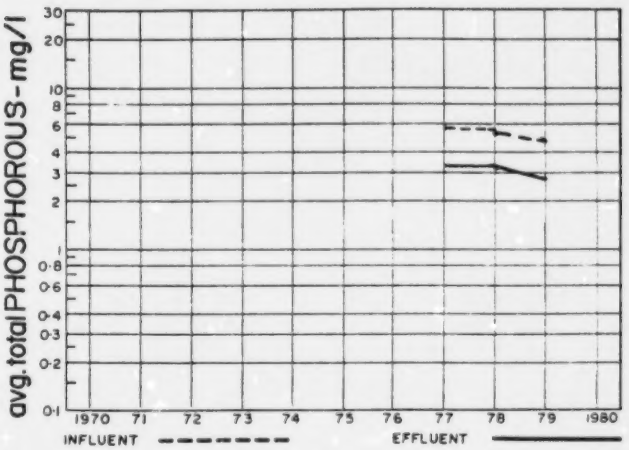
Retention: 30 minutes

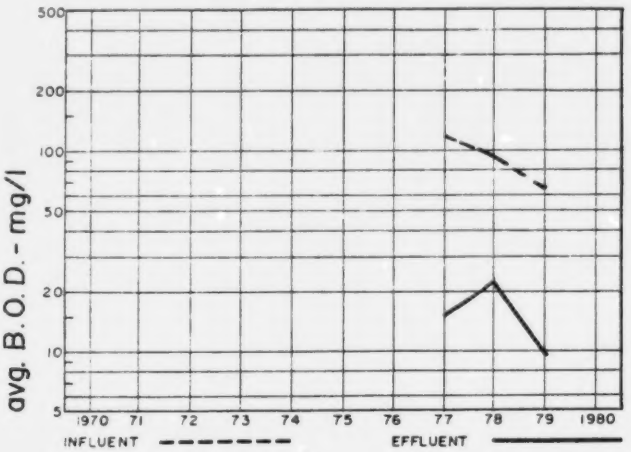
Pumping Station #1
2 pumps @ 100 IGPM @

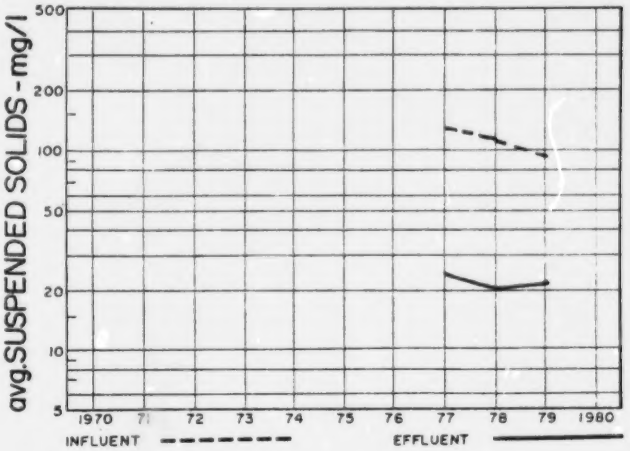
Outfall

To Rideau Canal (Cataraqui River).









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001505 CANA W P C P

MUNICIPALITY : PITTSBURG (CANA)
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 9,702
POPULATION SERVED : 210
PERCENT SERVED : 2.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.095 1000 M3 DESIGN BOD5 : 190.0 MG/L DESIGN SUSP.SOLIDS : 220.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION				REDUCTION				REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	2.409	.078	.173		80.0	34.0	57	.1	92.0	17.0	81	.1	5.3	2.6	50	.007
FEB	3.546	.127	.577		178.0	4.8	97	.6	262.0	26.0	90	.8	8.9	3.2	64	.020
MAR	6.673	.215	.555		20.0	10.0	50		68.0	37.4	45	.2	1.5	1.2	20	.002
APR	4.900	.163	.420		20.0	15.0	25		36.0	19.0	47		1.5	1.1	26	.002
MAY	2.519	.081	.135		107.0	19.0	82	.2	132.0	15.0	88	.2	4.1	2.8	31	.003
JUN	1.719	.057	.098		70.0	2.4	96	.1	139.2	15.5	88	.2	8.4	2.6	69	.010
JUL	.941	.030	.041		52.0	1.4	97		140.0	7.0	95	.1	7.4	6.0	18	.001
AUG	866	.028	.039		52.0	3.0	94		70.0	22.0	68		3.5	3.5		
SEP	2.228	.074	.107		61.0	2.5	95	.1	82.5	21.5	73	.1	5.1	4.0	20	.002
OCT	2.523	.081	.111		31.5	7.0	77		52.5	17.0	67		2.7	3.4	-	-
NOV	2.976	.099	.190		61.0	4.8	92	.1	70.0	32.0	54	.1	4.1	2.9	29	.004
DEC	3.676	.119	.349		38.0	3.0	92	.1	54.0	19.2	64	.1	3.5	2.4	31	.004
TOTAL	34.976							1.7				2.4				.055
AVERAGE		.096			64.2	8.9	86		99.8	20.7	79		4.6	2.9	36	
MAXIMUM			.577													
NO. OF SAMPLES					19	19			43	43			20	20		

Ministry of the Environment
Ontario

Northeastern Region

(5)

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

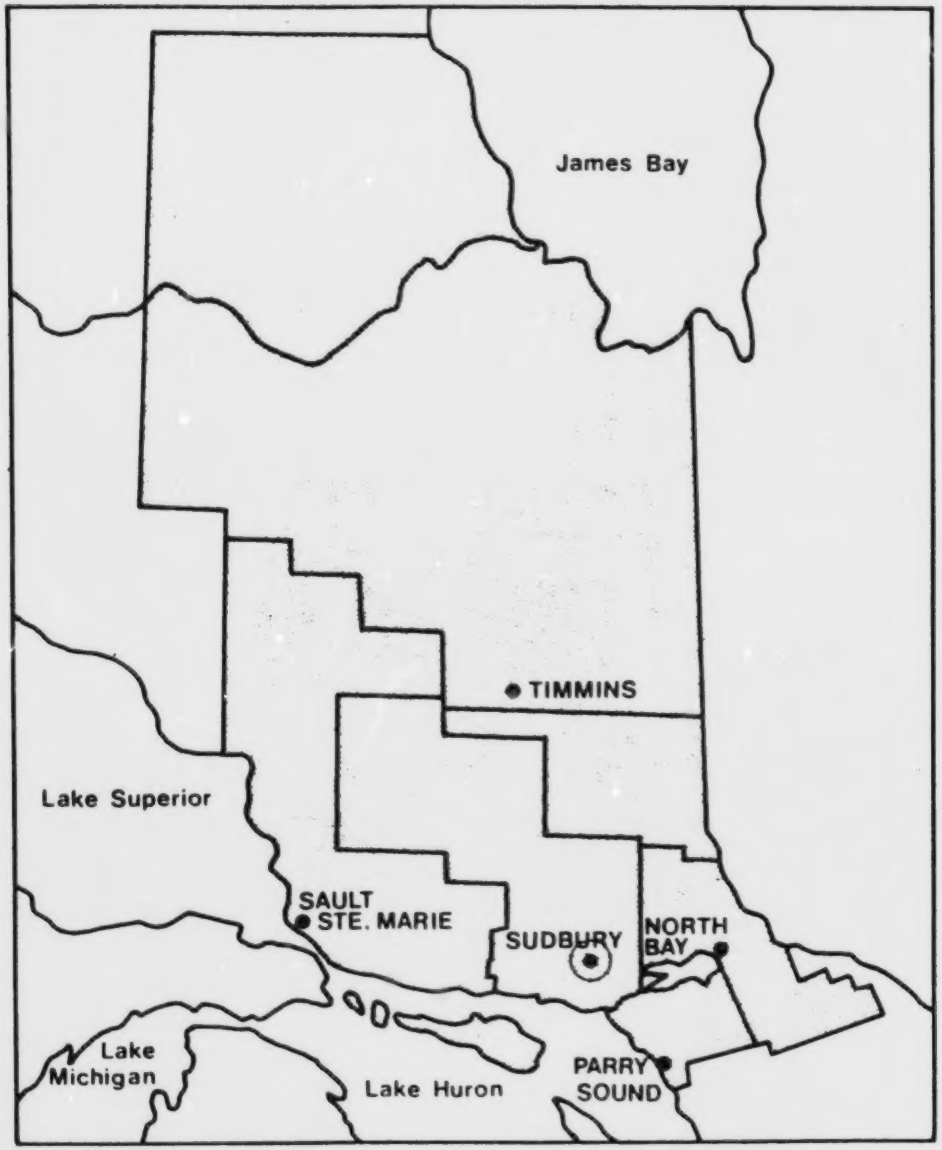
Sault Ste. Marie
445 Albert St. E.
705-949-4640

Timmins
83 Algonquin Blvd. W.
705-264-9474

Parry Sound
74 Church St.
705-746-2139

Northeastern Region
5

Ministry of the Environment
Ontario



DESIGN DATA - METRIC

BLACK R. - MATHESON (M.)

PROJECT Town of Matheson WPCP

PROJECT NO. 1-0150-68

TREATMENT Extended Aeration

DESIGN FLOW 0.68 $10^3 m^3/d$

SEWAGE PUMPING STATIONS

No. 1 Two (2) submersible pumps 7.6 l/s @ 9.9m TDH

No. 2 Two (2) submersible pumps 34.8 l/s @ 11.3m TDH

No. 3 Two (2) submersible pumps 7.6 l/s @ 11.9m TDH

PRETREATMENT

GRIT REMOVAL
2 grit channels .6m x 4.9m each
Total Volume: .37m^3
Retention: 2 weeks

COMMINUTOR
2.5cm Cord Model 10A. .75 kW

SECONDARY TREATMENT

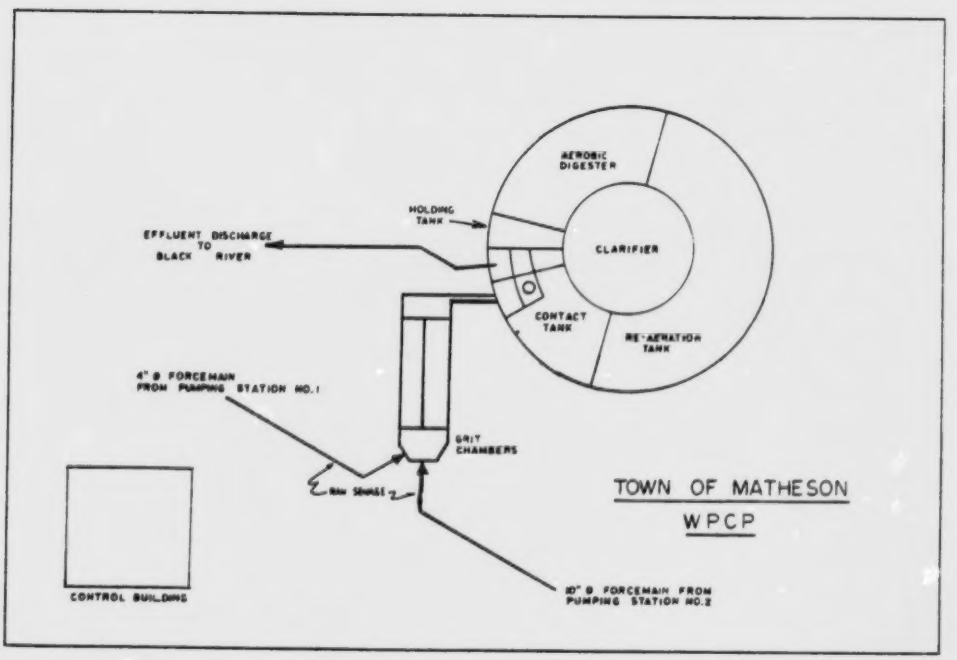
AERATION
Contact Tank Volume: 150.7 m^3
Retention: 3.5 hrs.
Reaeration Tank Volume: 395.1m^3
Retention: 9.1 hrs.
Aerobic Digester Volume 360.3m^3
Retention 14.4 hrs
Total Aeration Volume: 769.8m^3
Retention: 27 hrs.

AIR SUPPLY
2 blowers delivering 626.9 l/s
Motors 56 kW @ 3560 r/min. 60A

CLARIFIER
Size 9.1m dia. x 5.6m avg SWD
Volume: 370.5m^3
Loading: Surface = 10.4m^3/m^2. d
Weir = 23.8m^3/m-d

CHLORINATION

CHLORINE CONTACT TANK
Volume: 22.4m^3
Retention: 45 min.



DESIGN DATA - IMPERIAL

PROJECT Town of Matheson WPCP

PROJECT NO. 1-0150-68

TREATMENT Extended Aeration

DESIGN FLOW 0.15 MGD

SEWAGE PUMPING STATIONS

No. 1 Two (2) submersible pumps 100 gpm @ 32.5' T.D.H.

No. 2 Two (2) submersible pumps 460 gpm @ 37.0' T.D.H.

No. 3 Two (2) submersible pumps 100 gpm @ 39.0 T.D.H.

PRETREATMENT

GRIT REMOVAL
2 grit channels 2' x 16' each
Total Volume: 13 cu. ft.
Retention: 2 weeks

COMMINUTOR
10" Cord Model 10A. 1.0 h.p.

SECONDARY TREATMENT

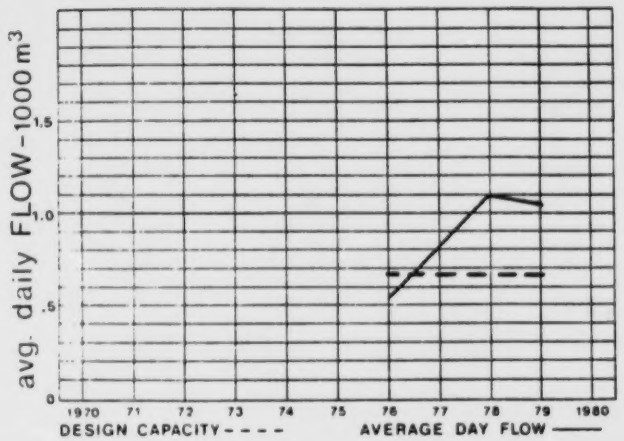
AERATION
Contact Tank Volume: 23,154 gal.
Retention: 3.5 hrs.
Reaeration Tank Volume: 86,914 gal.
Retention: 9.1 hrs.
Aerobic Digester Volume: 79,257 gal.
Retention: 14.4 hrs.
Total Aeration Volume 169,325 gal.
Retention: 27 hrs.

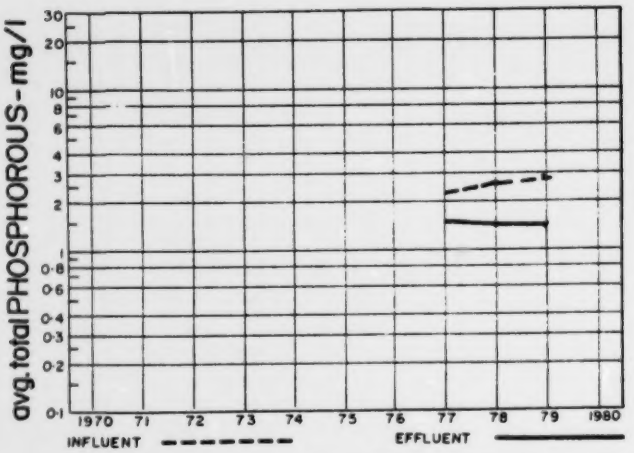
AIR SUPPLY
2 blowers delivering 1500 cfm
Motors: 75 h.p. @ 3560 r.p.m. 60A.

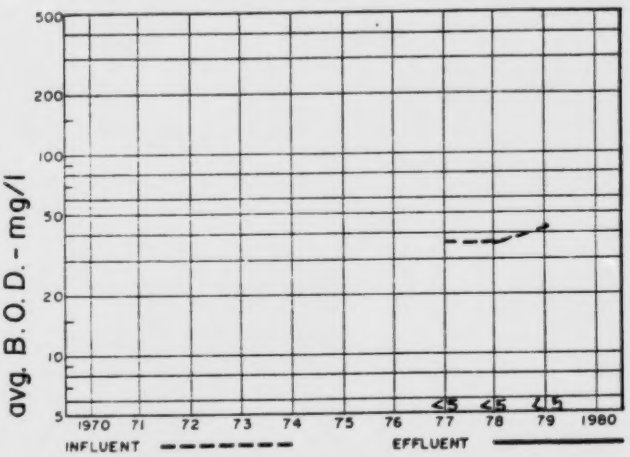
CLARIFIER
Size: 30' dia. x 18.5 avg. SWD
Volume: ±1,500 gal.
Loading: Surface 212 IG/ft^2/day
Weir 1595 IG/ft^2/day

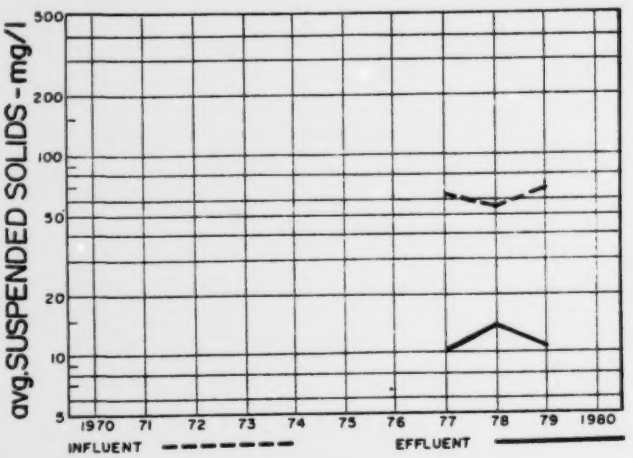
CHLORINATION

CHLORINE CONTACT TANK
Volume: 4673 gal.
Retention: 45 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000025 MATHESON WPCP

MUNICIPALITY : BLACK RIVER MATHESON
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

* DATA NOT AVAILABLE

CURRENT POPULATION : 3,567
POPULATION SERVED : 920
PERCENT SERVED : 25.7

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.881 1000 M3 DESIGN BODS : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	24 938	.803	.889	1.179	62.0	8.7	85	1.3	108.0	22.0	79	2.1	6.2	1.9	69	.107
FEB	22.017	.785	1.030	1.180	68.0	6.7	90	1.3	92.0	15.0	83	1.6	3.9	1.4	64	.055
MAR	35.277	1.136	1.709	2.773	50.0	7.0	86	1.5	70.0	15.0	78	1.9	3.7	1.4	62	081
APR	60.700	2.020	3.240		34.0	4.0	88	1.8	53.0	12.0	77	2.4	2.3	1.1	52	.073
MAY	37.230	1.200	1.790	2.000	58.0	2.5	95	2.0	67.0	8.0	88	2.1	3.8	*		
JUN	34 570	1.150	2.300	4.540	36.0	5.7	84	1.0	70.0	17.5	75	1.8	3.3	1.5	54	.062
JUL	28 860	.930	1.960	3.090	34.0	2.5	92	.9	55.0	7.5	86	1.3	6.0	1.4	76	.133
AUG	31.420	1.010	1.500	4.540	22.0	2.5	88	.6	40.0	10.0	75	.9	2.9	3.4	-	-
SEP	29.440	.980	1.870	2.540	32.0	1.6	95	.8	62.0	10.0	83	1.5	5.3	1.3	75	.118
OCT	37.980	1.220	2.720	3.810	33.5	4.7	85	1.0	70.0	10.0	85	2.2	3.1	1.1	64	.076
NOV	30.130	1.000	1.470	1.590	40.0	3.7	90	1.0	70.0	6.5	90	1.9	4.8	1.4	70	.102
DEC	24.710	.790	1.000	1.680	27.5	4.2	84	.5	25.0	5.0	80	.4	2.0	1.3	35	.017
TOTAL	397.272							14.3				20.8				.824
AVERAGE		1.085			41.4	4.4	89		65.1	11.5	82		3.9	1.5	60	
MAXIMUM			3.240	4.540												
NO. OF SAMPLES					24	24			24	22			23	21		

DESIGN DATA - METRIC

HAILEYBURY

PROJECT Town of Haileybury WPCP

PROJECT NO. 1-0069-67

DESIGN FLOW 1.6 10^3m^3/d

BOD - Raw Sewage 170 mg/l
- Removal 90%

SS - Raw Sewage 200 mg/l
- Removal 90%

TREATMENT: Contact Stabilization

PUMPING STATION

Two - 47.3 l/s @ 18.6m TDH
One Diesel engine

GRIT REMOVAL

Type: Manually cleaned channels
Size: Two

SCREENING

Bar Screen 4.4cm openings

AERATION

Volume: 235.1m^3
Detention: 3.6 hr @ 1.6 10^3m^3/d
Diffusers: S & L Aluminum

REAERATION SECTION

Volume: 604.1m^3
Detention: 7.6 hr. @ max. return rate of 1898.4m^3

AEROBIC DIGESTER

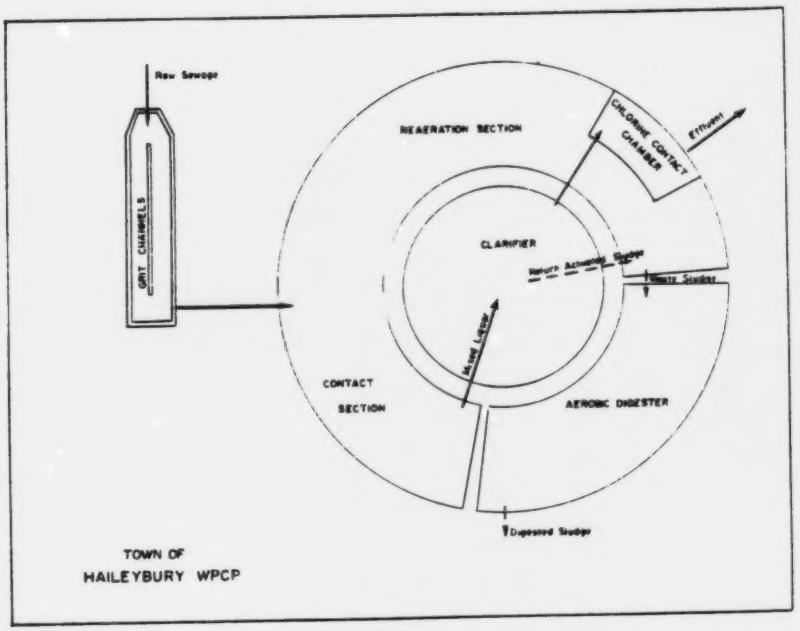
Volume: 424.8m^3
Loading: 0.12m^3/capita

SEDIMENTATION

Volume: 343.2m^3
Detention: 5.7 hr. @ 1591.1m^3
Loading: Surface weir

CHLORINE CONTACT CHAMBER

Volume: 39.1m^3
Detention: 35 min @ 1.6 10^3m^3/d



DESIGN DATA - IMPERIAL

PROJECT Town of Haileybury WPCP

PROJECT NO.	1-0069-67
DESIGN FLOW	0.350 mgd
BOD - Raw Sewage	170 mg/l
- Removal	90%
SS - Raw Sewage	200 mg/l
- Removal	90%

PUMPING STATION

Two - 625 IGPM @ 61 ft TDH
One Diesel engine

GRIT REMOVAL

Type: Manually cleaned channels
Size: Two

SCREENING

Bar Screen 1 3/4" openings

AERATION

Volume: 8,300 ft^3 or 52,400 gal
Detention: 3.6 hr @ 0.35 mgd
Diffusers: S & L Aluminum

REAERATION SECTION

Volume: 21,330 ft^3 or 132,900 gal
Detention: 7.6 hr @ max. return rate of 417,600 igpd

AEROBIC DIGESTER

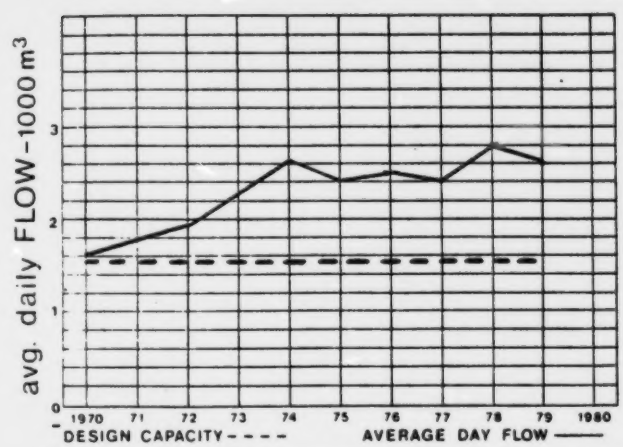
Volume: 15,000 ft^3 or 92,400 gal
Loading: 4.3 ft^3/capita

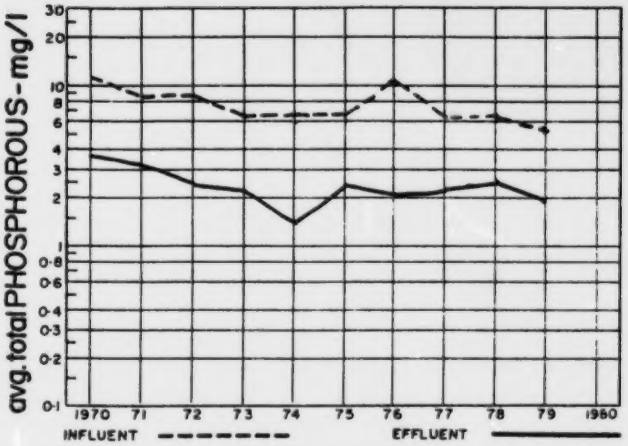
SEDIMENTATION

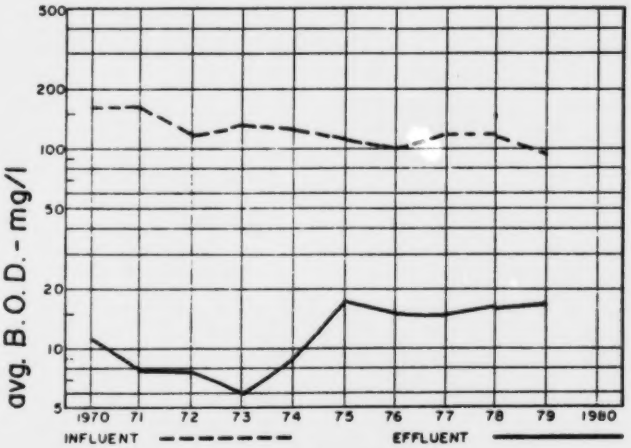
Volume: 12,100 ft^3 or 75,500 gal
Detention: 5.7 hr @ 350,000 igpd
Loading: Surface weir

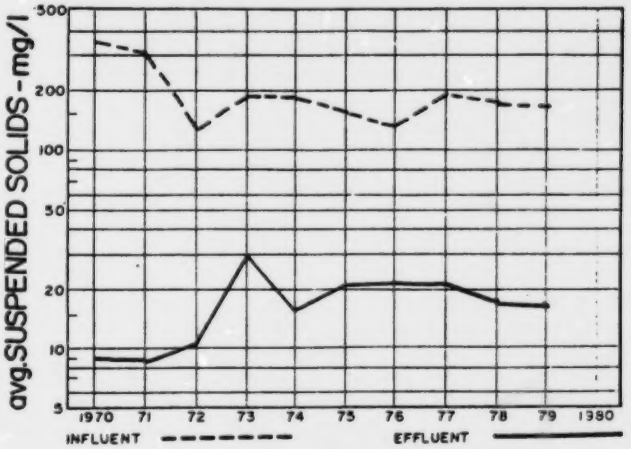
CHLORINE CONTACT CHAMBER

Volume: 9600 gal
Detention: 35 min @ 0.35 mg









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000310 HAILEYBURY WPCP

MUNICIPALITY : HAILEBURY
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 4,997
POPULATION SERVED : 3,240
PERCENT SERVED : 64.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.581 1000 M3 DESIGN BODS : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	115.491	3.723	3.846	3.932	72.0	11.0	84	7.0	207.0	8.0	96	22.9	6.8	1.0	85	.670
FEB	65.299	2.332	3.932	3.932	130.0	12.0	90	7.7	122.0	8.0	93	7.4	7.7	2.5	67	.340
MAR	93.998	3.032	4.450	1.928	125.0	44.0	64	7.8	125.0	20.0	84	9.8	5.0	2.4	52	.244
APR	118.200	3.900	4.300	3.900	39.0	39.0			63.0	63.0			1.6	1.6		
MAY	103.200	3.300	4.500	3.900	70.0	25.0	64	4.8	98.0	17.0	82	8.3	4.8	2.5	47	.237
JUN	81.800	2.700	4.200	3.900	95.0	18.0	81	6.2	380.0	11.0	97	30.1	7.6	2.1	72	.450
JUL	68.000	2.200	3.900	3.900	115.0	3.5	96	7.5	105.0	12.0	88	6.3	4.7	2.5	46	.150
AUG	57.080	1.840	2.700	3.900	70.0	10.0	85	3.4	127.5	10.5	91	6.6	6.4	4.2	34	.128
SEP	46.890	1.560	1.810	3.900	130.0	14.0	89	5.4	160.0	9.0	94	7.0	7.1	1.2	83	.277
OCT	76.100	2.400	3.900	3.900	58.0	8.0	89	3.9	77.5	5.0	93	5.5	4.7	1.5	67	.244
NOV	80.900	2.700	3.900	3.900	140.0	8.2	94	10.6	340.0	13.0	96	28.4	3.0	1.5	50	.121
DEC	71.000	2.200	3.100	3.900	111.0	10.5	90	7.1	117.5	23.0	80	6.7	8.0	2.0	66	.284
TOTAL	977.958							71.5				137.6				3.145
AVERAGE		2.657			96.2	18.7	82		160.2	16.6	89		5.4	2.0	61	
MAXIMUM			4.500	3.932												
NO. OF SAMPLES					22	22			22	22			22	22		

DESIGN DATA - METRIC

IROQUOIS FALLS

PROJECT Town of Iroquois Falls

PROJECT NO. 1-0096-67

TREATMENT Contact Stabilization
Prefabricated Package Plant
Dorr Oliver - Long. 2 units.

DESIGN FLOW 4.1 $10^3 m^3/d$

DESIGN POPULATION 7150

PRETREATMENT

GRIT REMOVAL
2 channels

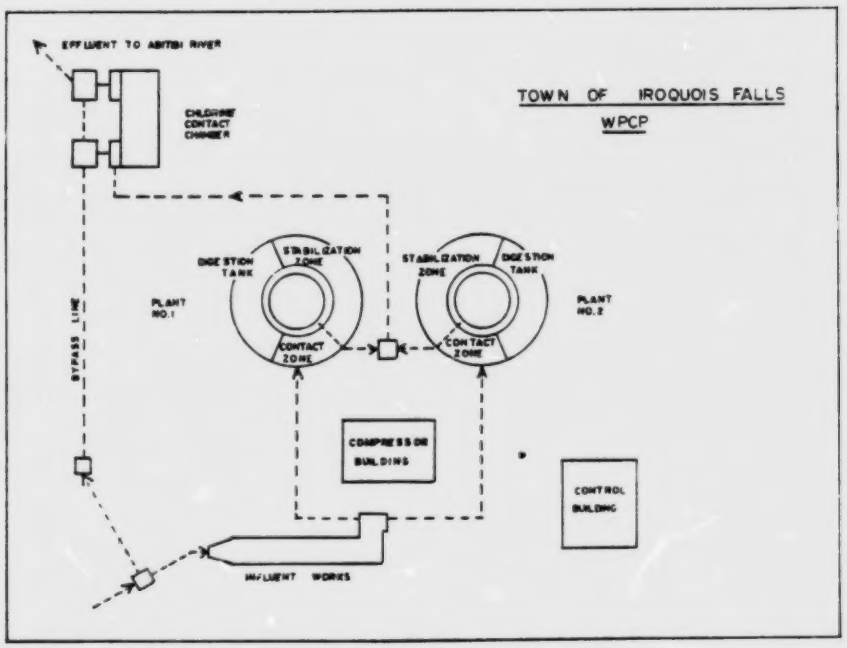
COMMINUTION
1 Comminutor and bypass channel
with manually cleaned screen.

SECONDARY TREATMENT
Total contact tank aeration volume: 493.6m^3
Detention: 2.9 hrs.
Total reaeration tank volume: 987.4m^3
Detention (Based on 100% return)$_4$ 5.8 hrs.
Aerobic Digester Volume: 888.3 m^3

AIR SUPPLY
3 blowers @ 386.6 l/s and 55.9 kW

CLARIFIER
Two clarifiers 14.2m dia. and 4.0m swd
Surface overflow rate: 13.0 $m^3/m^2 \cdot d$

CHLORINATION
Chlorine contact tank volume: 886.5m^3
Detention: 30 min.



DESIGN DATA - IMPERIAL

PROJECT Town of Iroquois Falls

PROJECT NO. 1-0096-67

TREATMENT Prefabricated Package Plant
Dorr Oliver - Long. 2 units.

DESIGN FLOW 0.9 MGD

DESIGN POPULATION 7150

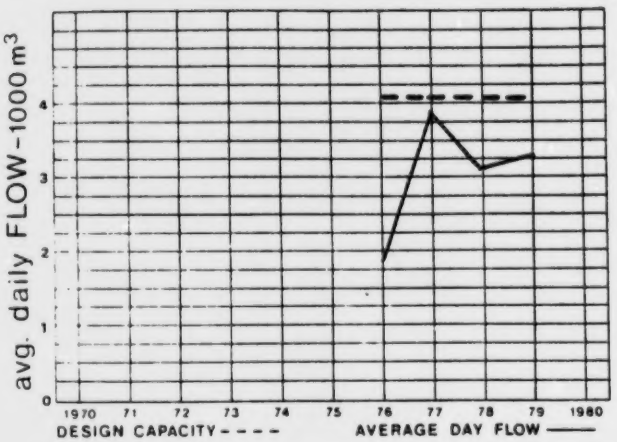
PRETREATMENT

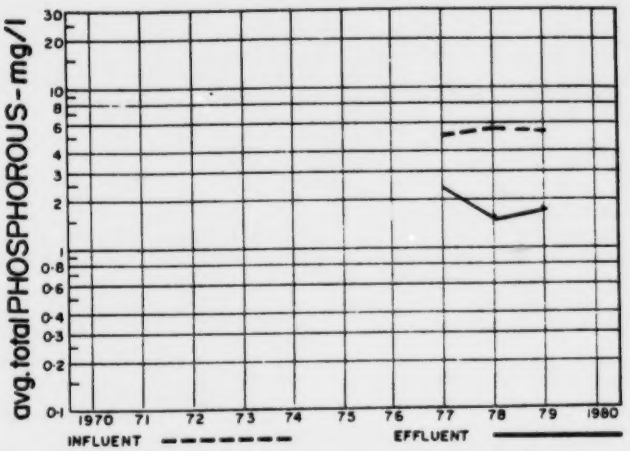
GRIT REMOVAL
2 channels
COMMINUTION
1 Comminutor and bypass channel
with manually cleaned screen.

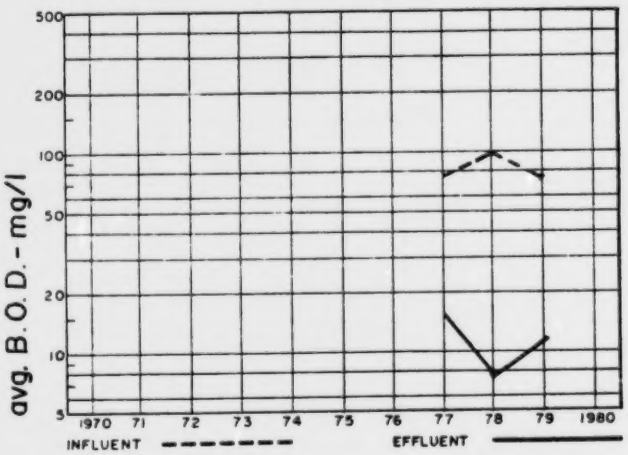
SECONDARY TREATMENT
Total contact tank aeration volume: 17430 ft^3
Detention: 2.9 hrs.
Total reaeration tank volume: 34,866 ft^3
Detention (Based on 100% return): 5.8 hrs.
Aerobic Digester Volume: 31,366 ft^3

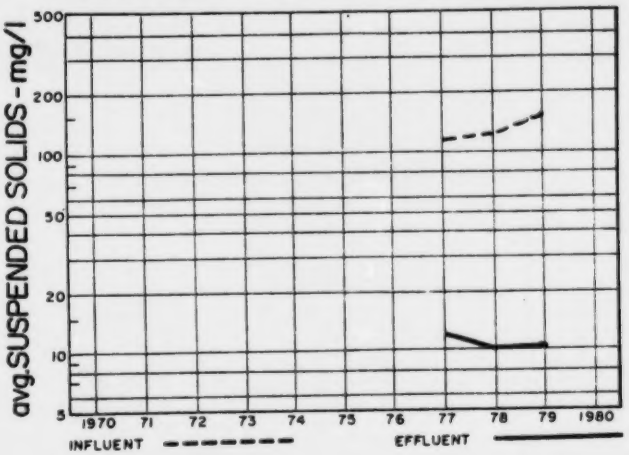
AIR SUPPLY
3 blowers @ 925 cfm and 75 h.p.
CLARIFIER
Two clarifiers 46.5 ft. dia. and 13.0 ft. SWD
Surface overflow rate: 265 gal/ft^2/day.

CHLORINATION
Chlorine contact tank volume: 19,500 gal.
Detention: 30 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002121 IROQUOIS FALLS WPCP

MUNICIPALITY : IROQUOIS FALLS
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 6,451
POPULATION SERVED : 6,100
PERCENT SERVED : 94.5

* DATA NOT AVAILABLE

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.091 1000 M3 DESIGN BODS : 155.0 MG/L DESIGN SUSP.SOLIDS : 180.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION				REDUCTION				REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/78																
JAN	60.598	1.950	2.159	4.091	85.0	4.0	95	4.9	144.0	11.0	92	8.0	6.3	2.4	61	.236
FEB	59.098	2.109	2.432	5.000	142.0	8.0	94	7.9	177.0	8.0	95	9.9	8.6	3.2	62	.319
MAR	96.298	3.105	9.151	13.638	60.0	9.0	85	4.9	128.0	10.0	92	11.3	*	*		
APR	206.470	6.880	11.800	14.540	81.0	11.0	86	14.4	110.0	12.0	89	20.2	3.6	1.2	65	.496
MAY	133.330	4.300	6.600	9.090	59.0	15.0	74	5.8	124.0	9.0	92	15.3	5.1	1.2	76	.520
JUN	115.810	3.860	6.770	9.090	55.0	28.0	49	3.1	111.0	12.0	89	11.4	*	*		
JUL	91.550	2.950	7.170	8.640	24.0	11.0	54	1.1	116.0	10.0	91	9.7	4.0	*		
AUG	95.090	3.070	4.650	8.640	102.0	16.0	84	8.1	209.0	9.0	95	19.0	6.7	*		
SEP	94.940	3.160	7.240	9.550	121.5	4.5	96	11.1	214.0	8.0	96	19.5	6.5	1.9	70	.437
OCT	113.600	3.660	8.190	9.090	41.0	19.0	53	2.4	92.5	11.0	88	9.2	2.2	1.1	50	.125
NOV	90.830	3.030	4.720	8.180	58.0	15.0	74	3.9	167.0	11.7	92	14.1	*	*		
DEC	69.150	2.230	2.870	5.450	*	*			216.0	11.0	94	14.1	*	*		
TOTAL	1226.764							68.0				162.2				2.133
AVERAGE		3.359			75.3	12.7	83		150.7	10.2	93		5.3	1.8	65	
MAXIMUM			11.800	14.540												
NO. OF SAMPLES					19	18			53	55			10	[illegible]		

DESIGN DATA - METRIC

PROJECT: Town of Kirkland Lake WPCP

PROJECT NO: 1-0248-70

TREATMENT: Contact Stabilization

DESIGN FLOW: 13.638 $10^3 m^3/d$

PRETREATMENT

SCREENING
Type: One mechanical screen
Size: 27.28 $10^3 m^3/d$

AERATED GRIT TANK
Size: 27.28 $10^3 m^3/d$

RAW SEWAGE PUMPS
Type: Five, SMART TURNER GMMFS
Size: 543.3 l/s (each) at 10.67m TDH

HOLDING TANK
Size: 1.16 $10^3 m^3$

BIOLOGICAL TREATMENT

CONTACT TANK
Size: 15.2m dia. x 4.57m swd
Volume: 836.46 m^3
Retention: 1.5 hr.
Aerator Type: Mechanical

KIRKLAND LAKE

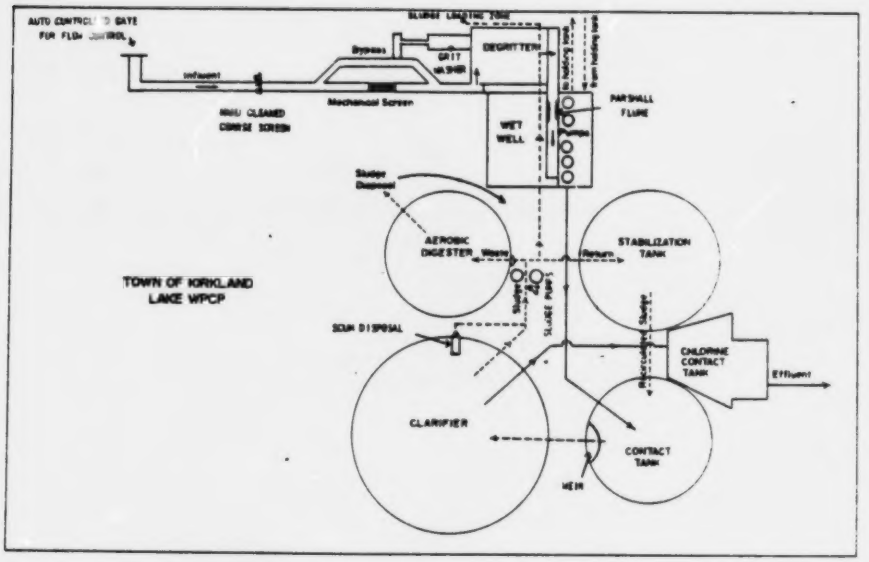
CLARIFIER
Size: One, 24.38m dia. x 3.05m swd
(1427.4 m^3)
Retention: 2.5 hrs.
Loading: Surface 32.76 $m^3/m^2.d$
Weir 94.62 m^3/m

SLUDGE STABILIZATION
Size: One 169.47m dia. x 4.51m swd
Volume: 1050.13 m^3

Aerator: Mechanical

CHLORINE TANK
Size: One, irregular shape 4.45 awl
Volume: 195.83 m^3
Retention: 21 min.

AEROBIC DIGESTER
Size: One, 15.24m dia. x 5.63m swd
Volume: 1031.94 m^3



DESIGN DATA - IMPERIAL

PROJECT
Town of Kirkland Lake WPCP

PROJECT NO.
1-0248-70

TREATMENT:
Contact Stabilization

DESIGN FLOW:
3.0 mgd

PRETREATMENT

SCREENING
Type: One mechanical screen
Size: 6.0 mgd max.

AERATED GRIT TANK
Size: 6.0 mgd

RAW SEWAGE PUMPS
Type: Five, SMART TURNER GMMFS
Size: 1300 cfm (each) 035' TDH

HOLDING TANK
Size: 0.25 mg

BIOLOGICAL TREATMENT

CONTACT TANK
Size: One 50' dia. x 15' swd
(184,000 I.G.)
Retention: 1.5 hr
Aerator Type: Mechanical

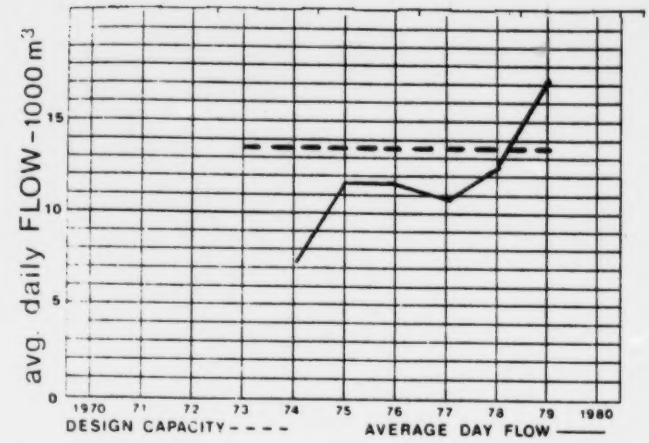
CLARIFIER
Size: One, 80' dia. x 10' swd
(314,000 I.G.)
Retention: 2.5 hr
Loading: Surface 670 gal/ft^2/day
Weir 6350 gal/ft

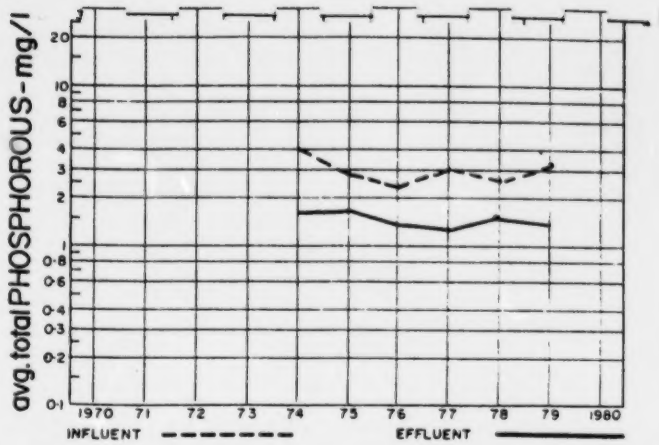
SLUDGE STABILIZATION
Size: One, 56' dia. x 15' swd
(231,000 I.G.)

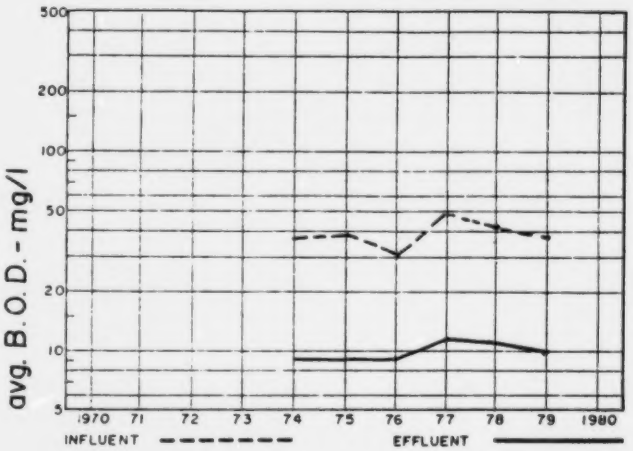
Aerator: Mechanical

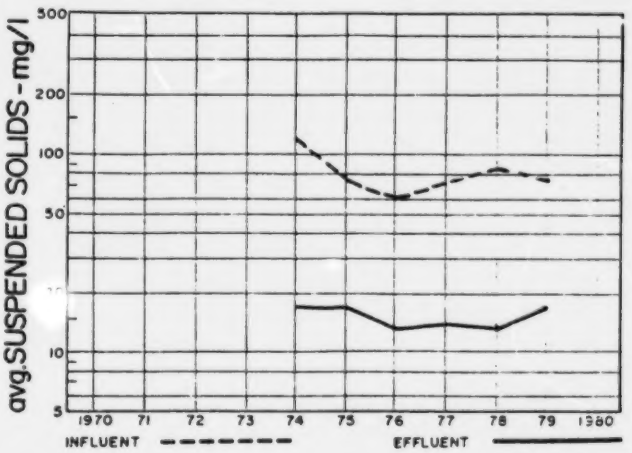
CHLORINE TANK
Size: One, irregular shape 14.6' awl
(43,077 I.G.)
Retention: 21 min.

AEROBIC DIGESTER
Size: One, 50' dia. x 18.5' swd
(227,000 I.G.)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120000015 MUNICIPAL PLANT

MUNICIPALITY : KIRKLAND LAKE
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

* DATA NOT AVAILABLE

CURRENT POPULATION : 12,768
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 13.638 1000 M3 DESIGN BODS : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
					INFLUENT	EFFLUENT		REDUCTION	INFLUENT	EFFLUENT		REDUCTION	INFLUENT	EFFLUENT		REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	525.745	16.961	20.412	40.914	44.0	17.0	61	14.1	126.0	22.6	82	54.3	7.7	1.3	83	3.365
FEB	527.427	18.820	23.776	50.006	40.0	17.0	57	12.1	107.0	25.0	76	43.2	2.2	2.4	-	-
MAR	649.896	20.957	29.867	45.460	45.0	6.5	85	25.0	125.0	17.0	86	70.1	3.6	1.1	69	1.625
APR	774.090	25.800	38.140	50.010	50.0	7.0	86	33.2	45.0	17.0	62	21.6	1.9	1.2	36	.542
MAY	710.560	22.920	34.270	45.460	13.0	13.0			54.0	26.0	51	19.8	2.9	1.7	39	.817
JUN	624.430	20.810	36.570	50.010	28.0	13.5	51	9.0	55.0	21.5	60	20.9	2.2	1.6	28	.406
JUL	465.120	15.000	37.410	28.820	57.0	7.8	86	22.8	35.0	18.0	48	7.9	4.7	1.7	63	1.395
AUG	444.630	14.340	22.400	15.990	38.0	6.0	84	14.2	105.0	12.5	88	41.1	2.9	1.9	32	.422
SEP	411.620	13.720	21.830	21.240	43.5	8.5	80	14.4	80.2	17.8	77	25.6	3.4	.9	71	1.000
OCT	350.200	11.670	15.920	37.280	36.0	4.5	87	11.0	110.0	10.0	90	35.0	3.0	.9	70	.735
NOV	372.580	12.420	24.650	39.550	*	*			*	*			*	*		
DEC	380.070	12.260	15.030	26.820	24.0	*			25.0	*			*	*		
TOTAL	6236.368							156.2				340.0				10.307
AVERAGE		17.140			38.0	10.0	73		78.8	18.7	76		3.4	1.4	58	
MAXIMUM			38.140	50.010												
NO. OF SAMPLES					19	19			35	30			18	19		

SHEET 2

DESIGN DATA - METRIC

LATCHFORD

PROJECT: Town of Latchford WPCP

PROJECT NO: 2-0140-68

TREATMENT: Extended Aeration

DESIGN FLOW: 0.341 $10^3m^3/d$

DESIGN BOD: 200.0 mg/l

DESIGN SS: 233.0 mg/l

GRIT CHANNELS
Two

COMMINUTOR

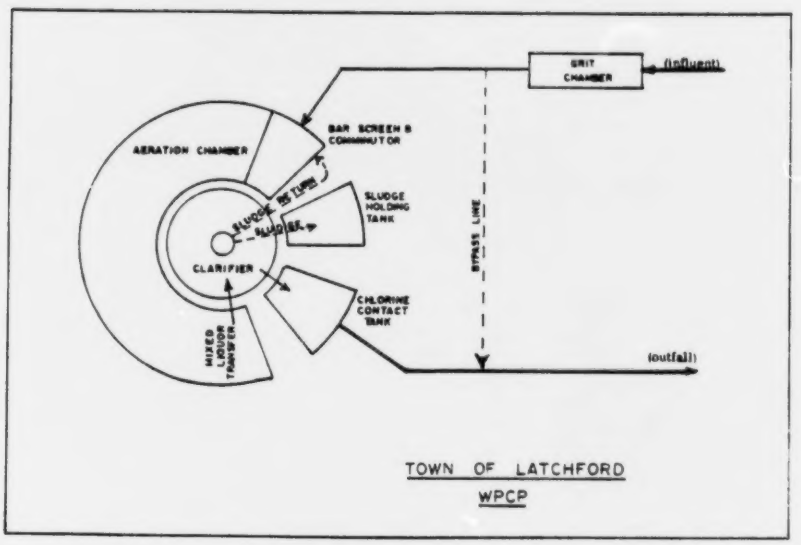
AERATION TANK
Volume: 331.86 m^3
Retention: 23.4 hr.

BLOWERS
Three, each 52.24 l/s @ 37.92 kPa

CLARIFIER
Size: One
Volume: 71.37m^3
Retention: 5.0 hr

SLUDGE HOLDING TANK
Volume: 11.092 m^3

CHLORINE CONTACT CHAMBER
Volume: 7.205 m^3
Retention: 30 min.



TOWN OF LATCHFORD
WPCP

DESIGN DATA - IMPERIAL

PROJECT: Town of Latchford WPCP

PROJECT NO: 2-0140-68

TREATMENT: Extended Aeration

DESIGN FLOW: .075 MIGD

DESIGN BOD: 200.0 mg/l

DESIGN S S: 233.0 mg/l

GRIT CHANNELS
Two

COMMINUTOR

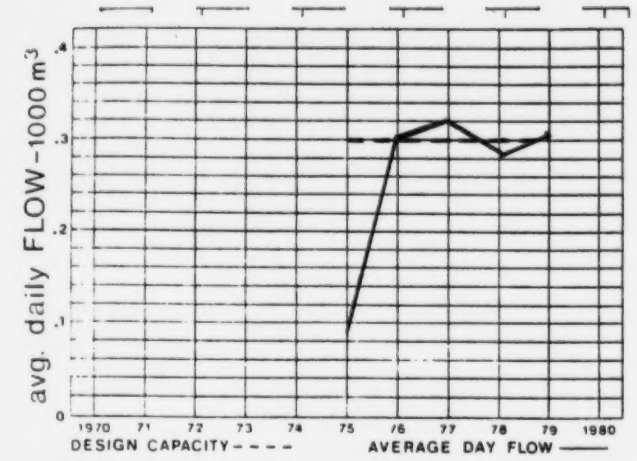
AERATION TANK
Volume: 73,000 IG
Retention: 23.4 hr

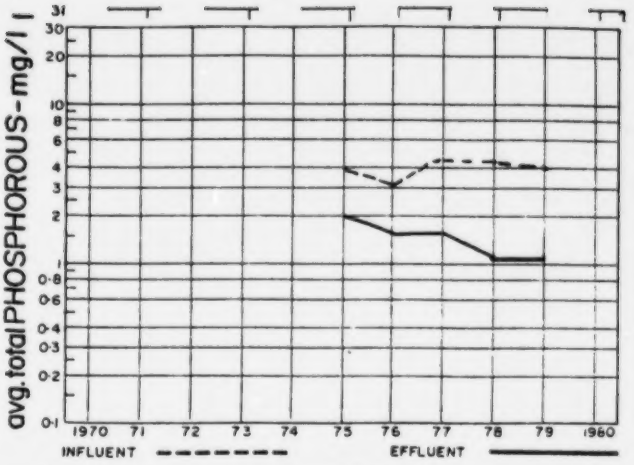
BLOWERS
Three, each 125 cfm @ 5½ psi

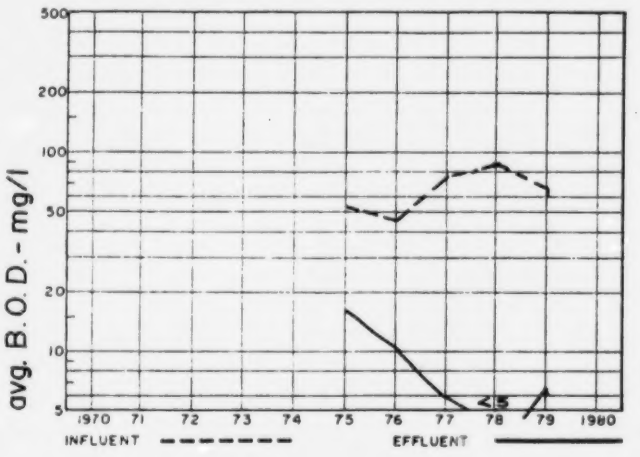
CLARIFIER
Size: One
Volume: 15,700 IG
Retention: 5.0 hr

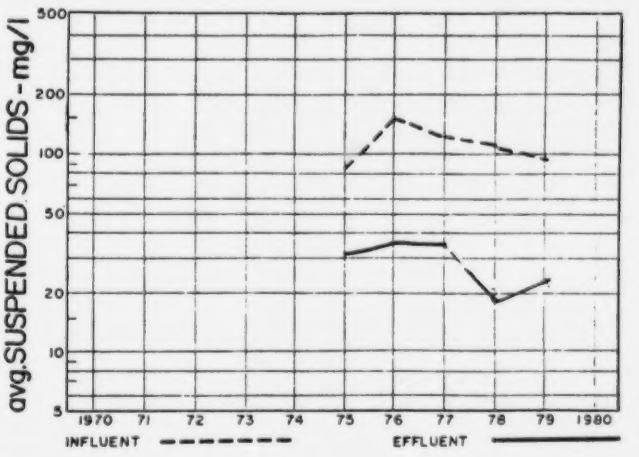
SLUDGE HOLDING TANK
Volume: 2440 IG

CHLORINE CONTACT CHAMBER
Volume: 1585 IG
Retention: 30 min









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001774 LATCHFORD WPCP

MUNICIPALITY : LATCHFORD
REGION : 05 NORTHEASTERN

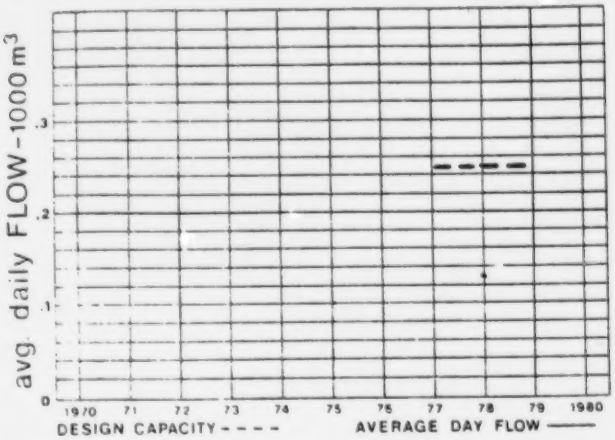
TREATMENT FACILITY EXT AERATION/CONT STABLIZATION

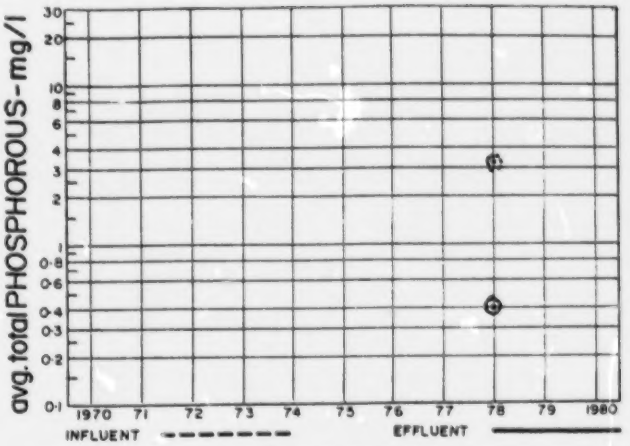
CURRENT POPULATION : 456
POPULATION SERVED : 428
PERCENT SERVED : 93.8

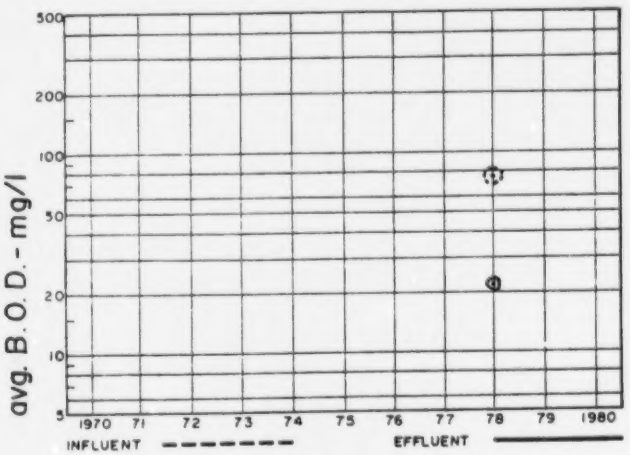
OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

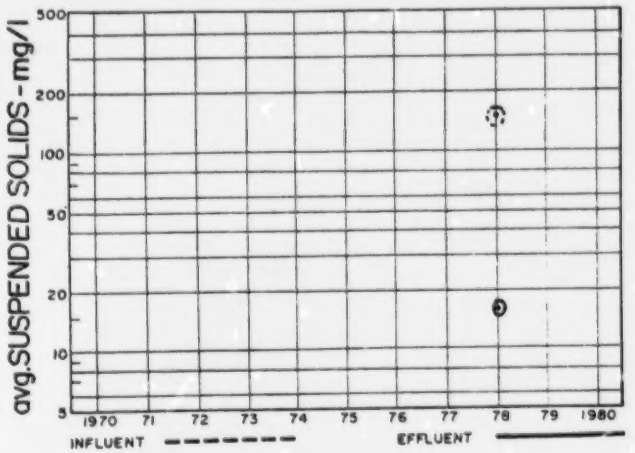
DESIGN CAPACITY : 0.340 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 233.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	8.806	.282	.400	1.964	61.0	2.9	95	.5	85.0	23.0	72	.5	4.0	.9	77	.027
FEB	9.219	.327	.482	1.964	95.0	30.0	68	.5	100.0	60.0	40	.3	3.3	2.4	27	.008
MAR	12.600	.410	.480	1.960	49.0	5.0	89	.5	50.0	25.0	50	.3	2.1	1.0	52	.014
APR	18.000	.600	1.085	1.960	32.0	7.2	77	.4	150.0	40.0	73	1.9	1.3	1.3	-	
MAY	15.510	.500	.751	1.960	46.0	4.0	91	.6	92.5	20.0	78	1.1	3.7	1.0	72	.042
JUN	9.618	.321	.379	1.960	86.0	5.5	93	.7	95.0	20.0	78	.7	4.7	1.0	78	.036
JUL	7.990	.258	.364		58.5	1.9	96	.4	112.5	12.5	88	.7	5.1	1.1	76	.031
AUG	6.404	.207	.262	1.960	62.0	1.9	96	.3	82.5	12.0	85	.4	4.8	1.1	75	.022
SEP	5.739	.191	.237	1.960	91.5	2.0	97	.5	117.5	17.5	85	.5	6.4	1.1	81	.030
OCT	7.296	.235	.320	1.960	63.5	2.8	95	.4	82.5	18.0	78	.4	3.4	1.1	65	.016
NOV	7.108	.237	.346	1.960	61.0	2.8	95	.4	135.0	30.0	77	.7	6.9	1.5	77	.038
DEC	7.150	.231	.337	1.960	68.0	8.5	87	.4	77.5	12.7	83	.4	3.2	1.2	63	.015
TOTAL	115.440							6.1				8.5				.279
AVERAGE		.317			64.4	6.2	90		98.3	24.2	75		4.0	1.2	69	
MAXIMUM			1.085	1.964												
NO. OF SAMPLES					22	21			22	22			22	20		









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120000319 MOOSONEE D.A.B.(NORTH)

MUNICIPALITY : MOOSONEE (NORTH)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 1,327
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY : MUNICIPALITY

DESIGN CAPACITY : 0.250 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><---			SUSPENDED SOLIDS ---><---			TOTAL PHOSPHORUS --->		
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG
JAN/79-DEC/79																
JAN	5.596	.182	.218		(DATA NOT AVAILABLE)				(DATA NOT AVAILABLE)				(DATA NOT AVAILABLE)			
FEB	4.591	.164	.204													
MAR	4.719	.150	.195													
APR	3.273	.109	.198													
MAY	3.482	.112	.111													
JUN	3.263	.109	.126													
JUL	3.218	.104	.119													
AUG	3.360	.108	.126													
SEP	3.231	.108	.128													
OCT	3.341	.108	.116													
NOV	3.264	.109	.129													
DEC	3.343	.108	.119													
TOTAL	44.681															
AVERAGE		.123														
MAXIMUM			.218													
NO. OF SAMPLES																

MOOSONEE (OLD TOWNSITE)

DESIGN DATA - METRIC

PROJECT Moosonee WPCP

PROJECT NO. 1-0002-66

TREATMENT Extended Aeration

DESIGN POPULATION 1,500

DESIGN FLOW .51 $10^3 m^3/d$

BOD - Raw Sewage - 254 mg/l
- Removal - 90%

SS - Raw Sewage - 286 mg/l
- Removal - 85%

PRELIMINARY TREATMENT

Comminution

Type: Chicago Pump Model 7B

CONTACT STABILIZATION

Contact Zone

Size: 2.7m x 3.4m x 3.7m
Volume: $33.6m^3$
Retention: 1.6 hr.

Recreation Zone

Size: 16.9m x 3.4m x 3.7m
Volume: $207.8m^3$
Retention: 9.8 hr.

Air Supply

Type: Hoffman
Size: Two, 130.4 l/s

Diffusers

Type: Shearfusers
Spacing: 22/tank @ 61.0cm centres

Sedimentation

Type: Smith & Loveless
Size: Two, $92.3m^3$
Retention: 4.3 hr
Loading: Surface 14.9 $m^3/m^2.d$
Weir 49.8 $m^3/m.d$

CHLORINATION

Type: Hypochlorination
W & T A & S

Chlorine Contact Chamber

Size: $9.1 m^3$
Retention: 26 min.

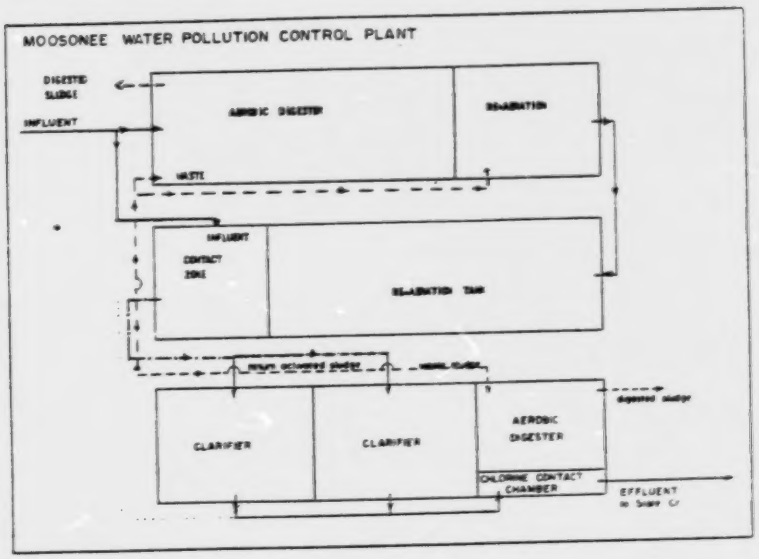
SLUDGE HANDLING

Digestion System - Aerobic

Size: One, $31.6m^3$
One, $97.3m^3$

OUTFALL

To Store Creek



DESIGN DATA - IMPERIAL

PROJECT Moosonee WPCP

PROJECT NO. 1-0002-66

TREATMENT EXTENDED AERATION

DESIGN FLOW 0.112 MIGD

DESIGN POPULATION 1,500

BOD - Raw Sewage - 254 mg/l
- Removal - 90 %

SS - Raw Sewage - 286 mg/l
- Removal - 85 %

PRELIMINARY TREATMENT

Comminution

Type: Chicago Pump Model 7B

CONTACT STABILIZATION

Contact Zone

Size: 9' x 11' x 12'
Volume: 7400 gal.
Retention: 1.6 hr.

Recreation Zone

Size: 55.5' x 11' x 12'
Volume: 45,700 gal.
Retention: 9.8 hr.

Air Supply

Type: Hoffman
Size: Two, 312 cfm

Diffusers

Type: Shearfusers
Spacing: 22/tank @ 24" centres

Sedimentation

Type: Smith & Loveless
Size: Two, 20,300 gal.
Retention: 4.3 hr.
Loading: Surface 304 gal/ft^2/day
Weir 3343 gal/ft/day

CHLORINATION

Type: Hypochlorination
W & T A&S&

Chlorine Contact Chamber

Size: 2000 gal.
Retention: 26 min.

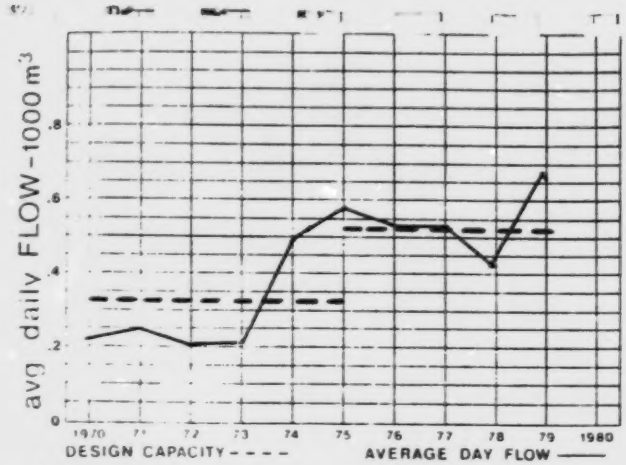
SLUDGE HANDLING

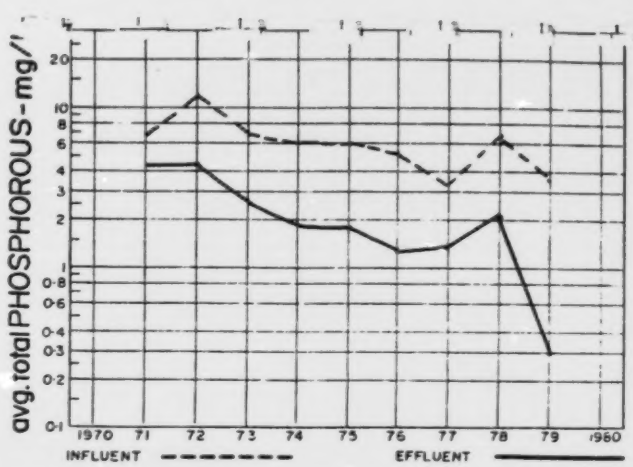
Digestion System - Aerobic

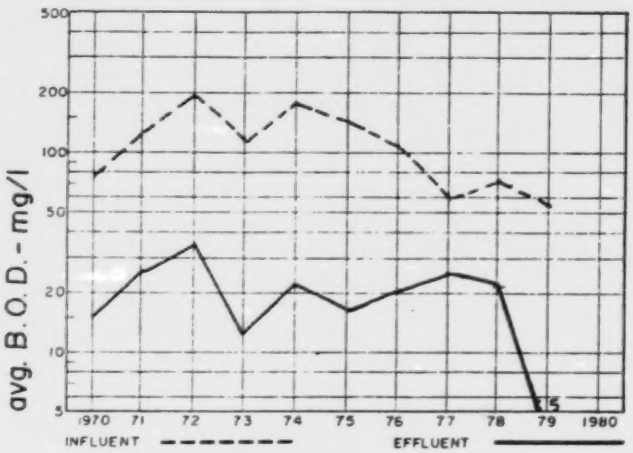
Size: One, 6960 gal.
One, 21,400 gal.

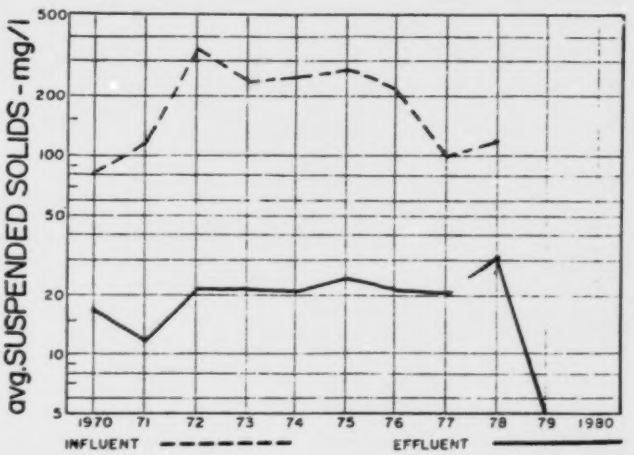
OUTFALL

To Store Creek









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001060 — MOOSONEE D.A.B.(OLD TOWNSITE)

MUNICIPALITY : MOOSONEE DEV'L AREA BD
REGION : 05 NORTHEASTERN

TREATMENT FACILITY EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 1,327
POPULATION SERVED : 1,200
PERCENT SERVED : 90.4

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.509 1000 M3 — DESIGN BOD5 : 254.0 MG/L — DESIGN SUSP.SOLIDS : 288.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUFNT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	15.602	.500	.545		(DATA NOT AVAILABLE)				(DATA NOT AVAILABLE)				(DATA NOT AVAILABLE)			
FEB	16.106	.577	.636													
MAR	18.311	.591	.655													
APR	28.601	.953	1.602													
MAY	22.108	.713	1.389													
JUN	19.726	.657	.845		55.0	4.1	92	1.0		5.0			3.7	.3	90	.066
JUL	18.948	.611	1.054													
AUG	19.031	.614	.810													
SEP	20.817	.694	.964													
OCT	28.197	.910	1.247													
NOV	16.349	.545	.758													
DEC	17.239	.556	.856													
TOTAL	241.033							1.0								(066)
AVERAGE		.660			55.0	4.1	92			5.0			3.7	3	90	
MAXIMUM			1.602													
NO. OF SAMPLES					1	1			1				1	1		

DESIGN DATA - METRIC

RAYSIDE-BALFOUR (AZILDA)

PROJECT: Rayside - Balfour
Azilda WPCP

PROJECT NO: 1-0108-67

TREATMENT: Extended Aeration

DESIGN FLOW: 1.[illegible] $10^3 m^3/d$

BRABANT CREEK P.S.
Type: Two, Crane-Deming
Size: each 128.69 l/s @ 20.12m TDH

PRINCIPAL ST. P.S.
Type: Two Allis-Chalmers
Size: each 2031.80 l/s @ 21.34m TDH

GRIT CHANNELS
Size: Three, each 10.44m x 0.61m x 0.88m
Volume: (total) $16.91 m^3$
Retention: (total) 8.6 min

COMMINUTOR
Type: Cord
Size: 406.4 mm

AERATION TANK
Volume: $2071.93 m^3$
Retention: 17.3

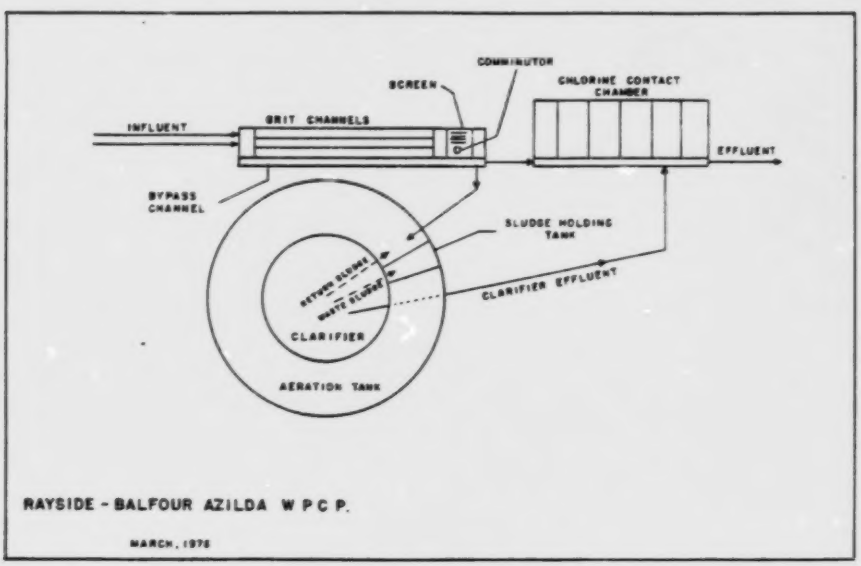
CLARIFIER
Size: 17.37m dia.
Volume: $935.567 m^3$
Retention: 7.5 hr
Loading:
- Surface 11.976 $m^3/m^2 \cdot d$
- Weir 52.031 $m^3/m \cdot d$

BLOWERS
Type: Two Hoffmann 38407
Size: 702.07 l/s

SLUDGE HOLDING TANK
Volume: $85.01 m^3$

CHLORINE CONTACT TANK
Type: 5-pass
Volume (total): $116.378 m^3$
Retention: 39 min.

SLUDGE PUMP
Type: Flygt
Size: 101.6mm



RAYSIDE - BALFOUR AZILDA W P C P.

MARCH, 1978

DESIGN DATA - IMPERIAL

PROJECT: Rayside - Balfour
Azilda WPCP

PROJECT NO. 1-0108-67

TREATMENT: Extended Aeration

DESIGN FLOW: .4[illegible] mgd

BRABANT CREEK P.S.
Type: Two, Crane-Deming
Size: each 1700 igpm @66' TDH

PRINCIPAL ST. P.S.
Type: Two Allis-Chalmers
Size: each 630 igpm @70' TDH

GRIT CHANNELS
Size: Three, each 34.25' x 2' x 2.9'
Volume: (total) 3720 I.G.
Retention: (total) 8.6 min

COMMINUTOR
Type: Cord
Size: 16"

AERATION TANK
Volume: 455,770 I.G.
Retention: 17.3 hr

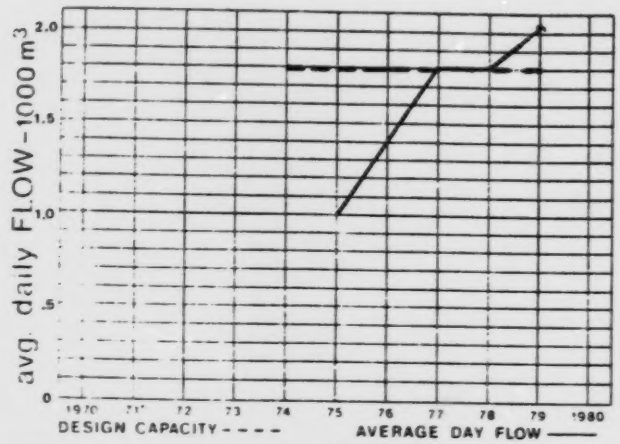
CLARIFIER
Size: 57' dia
Volume: 205,800 I.G.
Retention: 7.5 hr
Loading:
- Surface 265 I.G./ft^2/day
- Weir 3492 I.G./ft/day

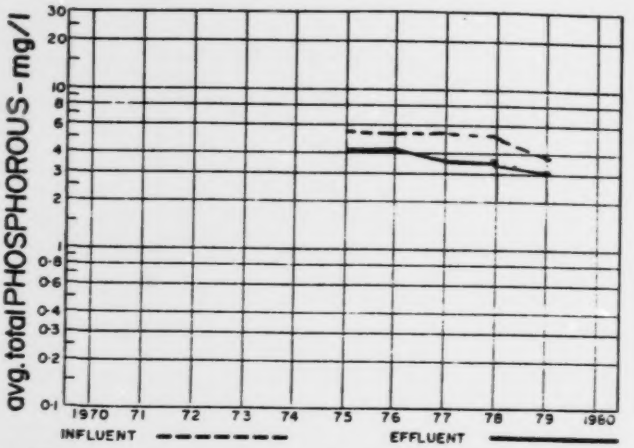
BLOWERS
Type: Two Hoffmann 38407
Size: each 1480 cfm

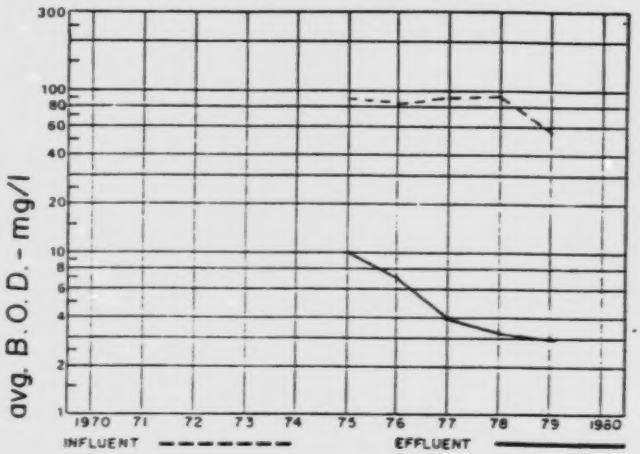
SLUDGE HOLDING TANK
Volume: 18,700 I.G

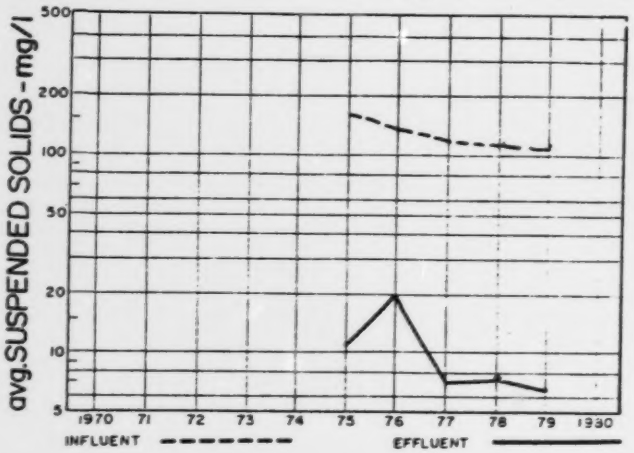
CHLORINE CONTACT TANK
Type: 5-pass
Volume (total): 25,600 I.G.
Retention: 58 min.

SLUDGE PUMP
Type: Flygt
Size: 4-inch









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001783 AZILDA WPCP

MUNICIPALITY : RAYSIDE BALFOUR AZILDA
REGION : 05 NORTHEASTERN

TREATMENT FACILITY EXT AERATION/CONT STABLIZATION

* DATA NOT AVAILABLE

CURRENT POPULATION : 15,369
POPULATION SERVED : 4,579
PERCENT SERVED : 29.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.818 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	42.278	1.364	1.500	19.500	80.0	2.1	97	3.2	139.0	3.7	97	5.7	4.5	4.4	2	.004
FEB	38.186	1.364	1.500	19.548	115.0	2.6	97	4.2	103.0	5.0	95	3.7	5.6	4.4	21	.046
MAR	96.830	3.182	5.384	19.548	24.0	7.0	70	1.6	64.0	9.8	84	5.2	4.3	3.9	9	.039
APR	151.520	5.050	7.460	19.548	18.0	5.3	70	1.9	94.0	13.7	85	12.1	2.2	1.5	31	.108
MAY	95.960	3.090	5.500	19.548	22.0	2.0	90	1.9	61.0	5.7	90	5.3	1.9	1.9		
JUN	43.940	1.465	1.864	19.548	38.0	1.8	95	1.5	113.0	5.0	95	4.7	2.8	2.5	10	.013
JUL	35.348	1.140	1.591	19.548	143.0	1.4	99	5.0	147.0	4.3	97	5.0	6.9	4.4	36	.088
AUG	34.776	1.122	1.418		79.0	2.3	97	2.6	182.0	4.6	97	6.1	5.0	3.9	22	.038
SEP	42.695	1.423	1.727		74.0	1.9	97	3.0	142.0	5.8	95	5.8	3.7	3.7		
OCT	54.810	1.768	2.182		35.0	2.8	92	1.7	80.0	6.9	91	4.0	2.4	1.4	41	.055
NOV	74.570	2.486	3.773		22.0	4.0	81	1.3	54.0	5.6	89	3.6	2.3	1.9	15	.026
DEC	*	*			*	*			*	*			*	*		
TOTAL	710.913							28.5				61.5				415
AVERAGE		2.132			59.0	3.0	94		107.1	6.3	94		3.7	3.0	18	
MAXIMUM			7.460	19.548												
NO. OF SAMPLES					21	21			67	65			21	21		

DESIGN DATA - METRIC

RAYSIDE-BALFOUR (CHELMSFORD)

PROJECT: Chelmsford WPCP

PROJECT NO.: 2-1004-73

DESIGN FLOW: 3.1 $10^3 m^3/d$

TREATMENT: Extended Aeration
(or Contact Stabilization)

GRIT REMOVAL
Type: Grit Remover Cyclone

BIOLOGICAL TREATMENT
One of two identical units described hereunder

CONTACT CHAMBER
Volume: 97.7 m^3
Retention: 0.86 hr
Diffusers: Coarse Bubble

RE-AERATION CHAMBER
Volume: 709.2 m^3
Retention: 6.2 hr.
Diffusers: Coarse Bubble

ON-SITE LIFT STATION
Type: Smart & Turner (Three)
Size: 1-45.4 l/s & 16.7 l/s (two speed)
2-90.8 l/s

CLARIFIER
Volume: 745.5 m^3
Retention: 6.6 hr

AEROBIC DIGESTER NO. 1
Volume: 297.8 m^3
Diffusers: Coarse Bubble

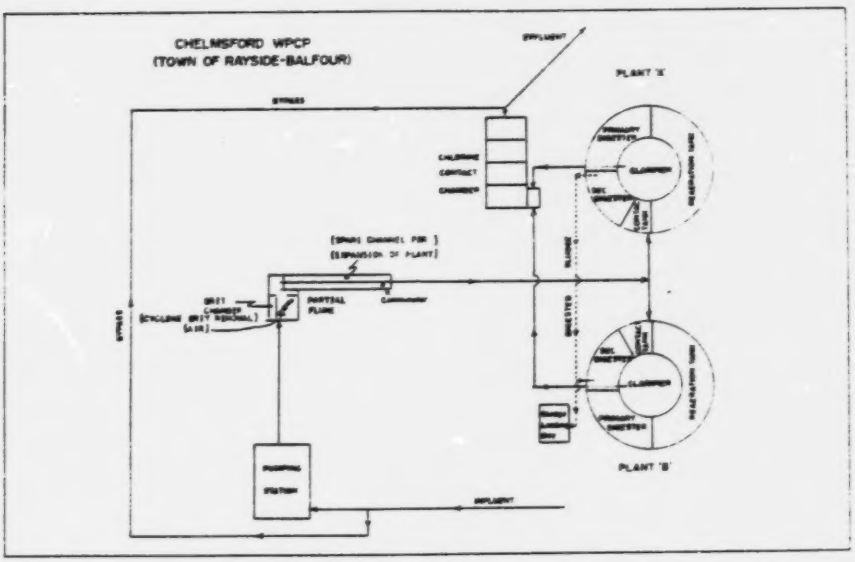
AEROBIC DIGESTER NO. 2
Volume: 297.8 m^3
Diffusers: Coarse Bubble

CHLORINE CONTACT CHAMBER
Common to both plants
Volume: 136.4 m^3
Retention: 36 min.

BLOWERS
Type: Spencer
Size: Each 952.5 l/s

COMMINUTOR
Type: Infilco
Size: 40.6 cm

SLUDGE PUMP
Type: Flygt
Size: 10.2 cm



DESIGN DATA - IMPERIAL

Project: Chelmsford WPCP
Project No: 2-1004-73
Design Flow: 0.675 = 1 G D
Treatment: Extended Aeration
(or Contact Stabilization)

GRIT REMOVAL
Type: Grit Remover Cyclone

BIOLOGICAL TREATMENT
One of two identical units described hereunder

CONTACT CHAMBER
Volume: 21,500 I.G.
Retention: 0.86 hr
Diffusers: Coarse Bubble

RE-AERATION CHAMBER
Volume: 156,000 I.G.
Retention: 6.2 hr
Diffusers: Coarse Bubble

ON-SITE LIFT STATION
Type: Smart & Turner (Three)
Size: 1-600 GPM & 2-1200 GPM (Two speed)
2-1200 GPM

CLARIFIER
Volume: 164,000 I.G.
Retention: 6.6 hr

AEROBIC DIGESTER No. 1
Volume: 65,500 I.G.
Diffusers: Coarse Bubble

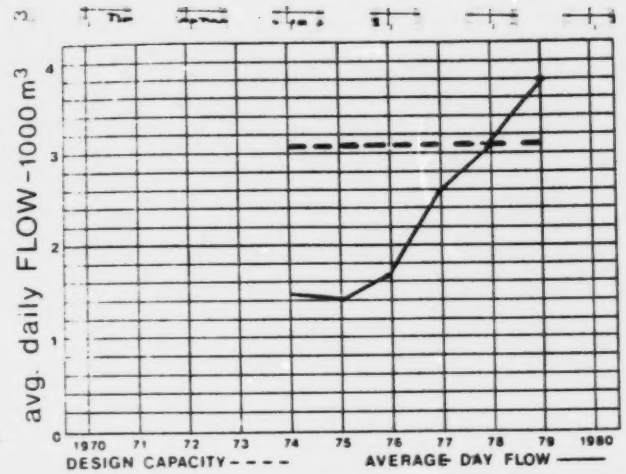
AEROBIC DIGESTER No. 2
Volume: 65,500 I.G.
Diffusers: Coarse Bubble

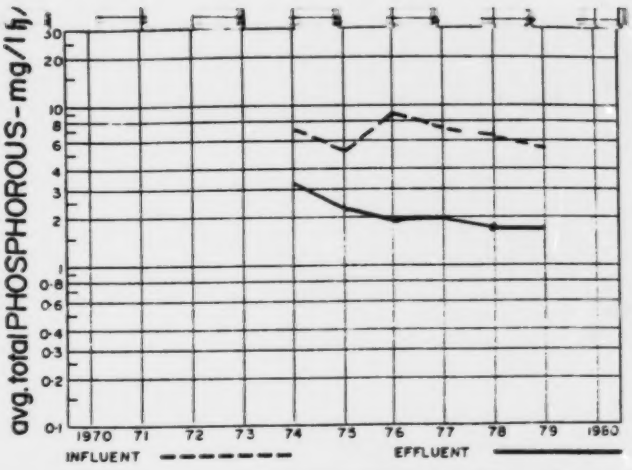
CHLORINE CONTACT CHAMBER
Common to both plants
Volume: 30,000 I.G.
Retention: 36 min

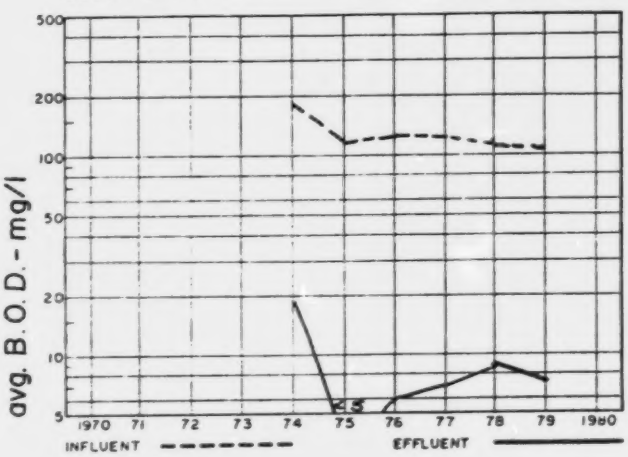
BLOWER
Type: Spencer
Size: Each 2280 C.F.M.

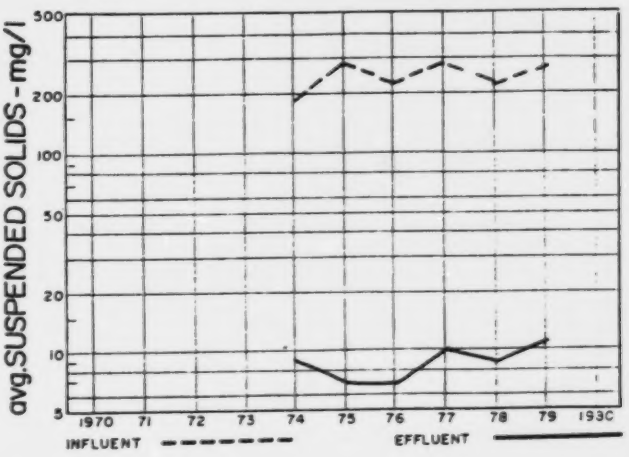
COMMINUTOR
Type: Infilco
Size: 16"

SLUDGE PUMP
Type: Flygt
Size: 4"









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120001568 CHELMSFORD W P C P OPER TO MUN IN 80 MUNICIPALITY : RAYSIDE BALFOUR CHLMSF'D
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
CONTACT STABILIZATION

* DATA NOT AVAILABLE

CURRENT POPULATION : 18,389
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : [illegible] 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	74.327	2.364	2.591	7.728	110.0	4.7	95	7.8	189.0	7.5	96	13.4	6.6	1.3	80	.394
FEB	65.508	2.337	2.500	7.728	165.0	9.7	94	10.1	185.0	8.5	95	11.5	8.8	1.7	80	.465
MAR	176.112	5.637	11.729		97.0	12.8	86	14.8	297.0	18.8	93	48.9	3.0	1.6	46	.247
APR	237.245	7.908	10.450		32.5	13.8	57	4.4	299.2	30.3	89	63.7	1.7	1.3	23	.095
MAY	146.000	4.700	7.720		64.0	9.8	85	7.9	157.7	14.4	90	20.9	4.9	.9	81	.584
JUN	91.100	3.036	3.590		170.0	7.6	95	14.7	189.0	5.8	96	16.6	8.5	1.6	81	.629
JUL	83.400	2.700	3.500	6.000	135.0	2.0	98	11.0	383.0	4.1	98	29.9	8.6	3.3	61	.442
AUG	89.450	2.885	3.270	3.927	115.0	7.2	93	9.6	173.3	5.8	98	14.9	7.2	1.9	73	.474
SEP	82.900	2.763	3.140	2.954	101.0	6.2	93	7.8	329.1	3.9	98	26.9	8.6	2.2	66	.369
OCT	99.020	3.190	4.180	2.954	129.0	5.0	96	12.2	222.0	6.7	96	21.3	5.8	2.1	62	.381
NOV	130.660	4.350	6.600		82.0	4.0	95	10.1	462.0	7.7	98	59.3	3.9	1.4	64	.327
DEC	*	*			*	*			*	*			*	*		
TOTAL	1275.722							111.0				328.0				4.387
AVERAGE		3.806			109.1	7.5	93		260.5	10.3	96		5.9	1.7	70	
MAXIMUM			11.729	7.728												
NO. OF SAMPLES					24	24			85	102			24	24		

DW2

DESIGN DATA - METRIC

PROJECT Town of Smooth Rock Falls

PROJECT NO. 1-0097-67

TREATMENT Extended Aeration

DESIGN FLOW 1.637 $10^3 m^3/d$

DESIGN POPULATION 3000

BOD - Raw Sewage 150 mg/l
- Removal 90%

SS - Raw Sewage 150 mg/l
- Removal 90%

SECONDARY TREATMENT

Aeration Tank

Volume: 1180.5m^3
Detention: 17.25 hr.

Secondary Sedimentation

Size: 13.1m dia. x 3.0m swd x 3.7m cwd
Loading: Weir, 39.6m^3/mwd
Detention: 46 min.

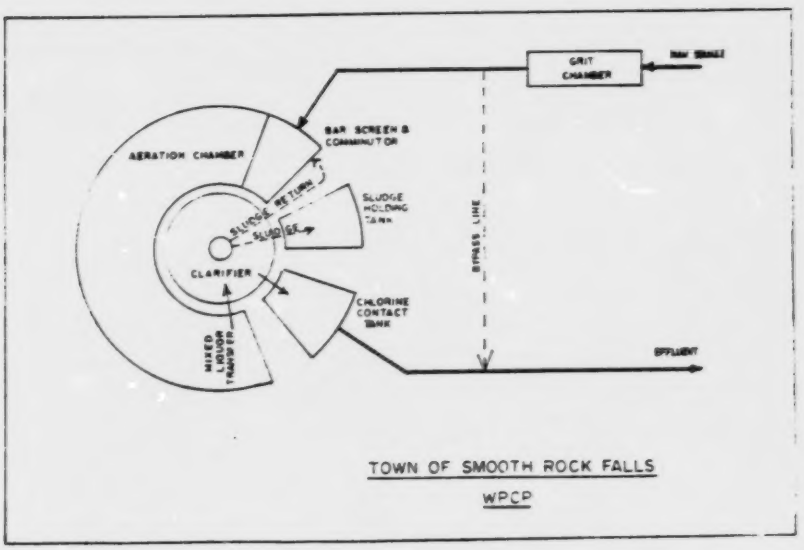
SLUDGE HANDLING

Holding Tank Volume: 42.5 m^3

CHLORINATION

Chlorine Contact Chamber

Size: 34.0 m^3



TOWN OF SMOOTH ROCK FALLS

WPCP

DESIGN DATA - IMPERIAL

PROJECT Town of Smooth Rock Falls

PROJECT NO. 1-0097-67
TREATMENT Extended Aeration
DESIGN FLOW 0.36 mgd
DESIGN POPULATION 3000

BOD - Raw Sewage 150 mg/l
- Removal 90%

SS - Raw Sewage 150 mg/l
- Removal 90%

SECONDARY TREATMENT

Aeration Tank

Volume: 41,700 $ft.^3$
Detention: 17.25 hr.

Secondary Sedimentation

Size: 43' dia. 1v SWD 12' CWD
Loading: weir, 2660 gal./ft./day
Detention: 46 min

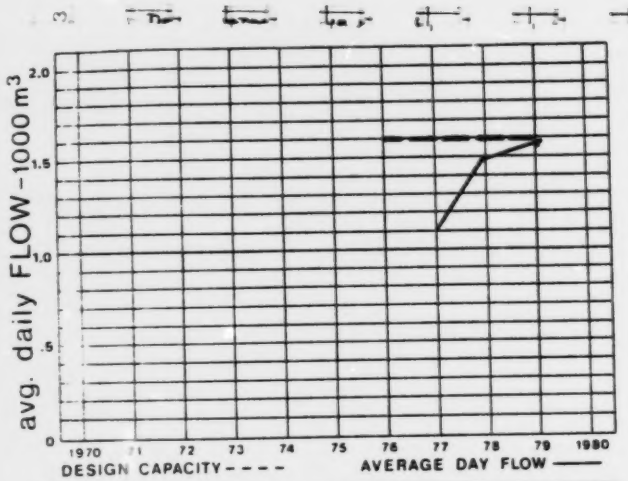
SLUDGE HANDLING

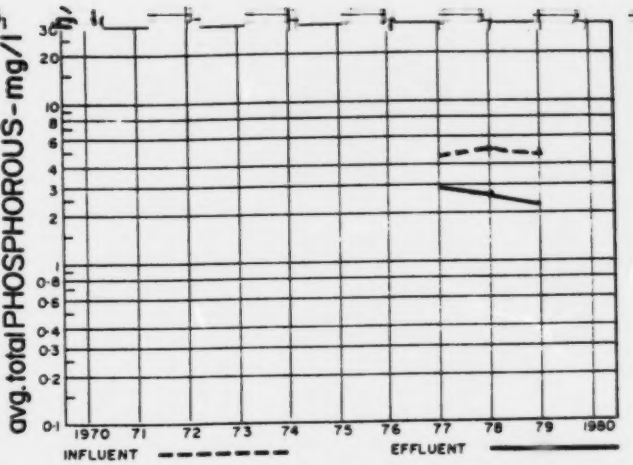
Holding Tank Volume: 1500 $ft.^3$

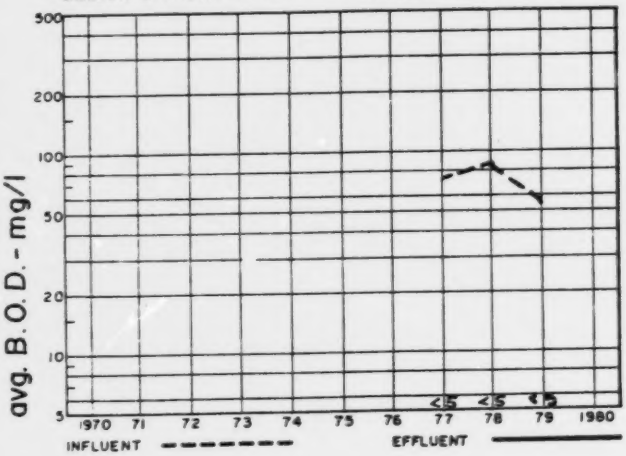
CHLORINATION

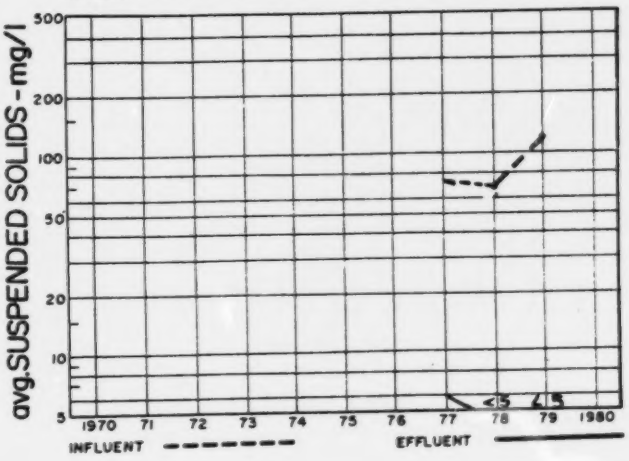
Chlorine Contact Chamber

Size: 1200 $ft.^3$









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002130 SMOOTH ROCK FALLS WPCP

MUNICIPALITY : SMOOTH ROCK FALLS
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

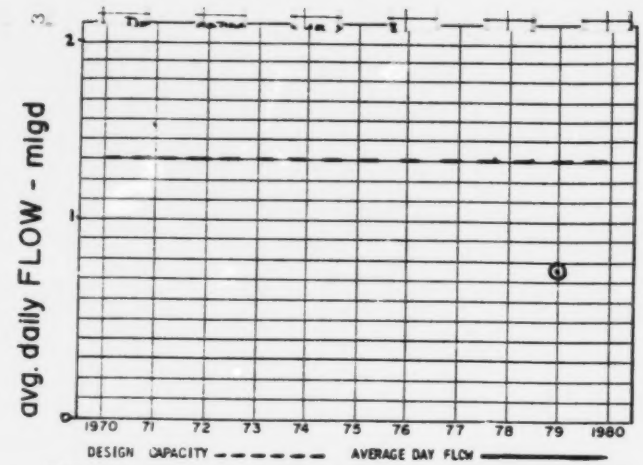
CURRENT POPULATION : 2,373
POPULATION SERVED : 2,325
PERCENT SERVED : 97.9

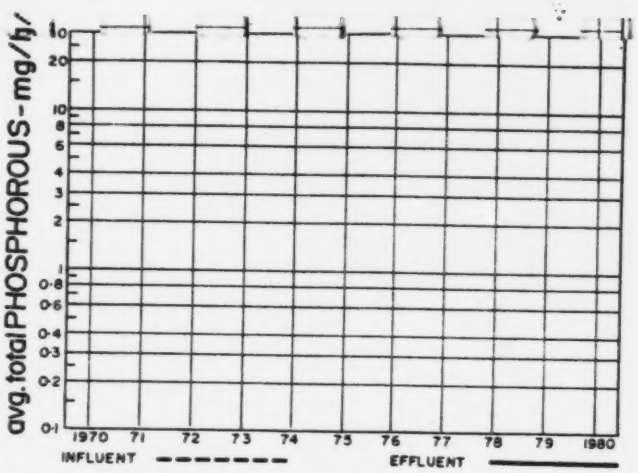
OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

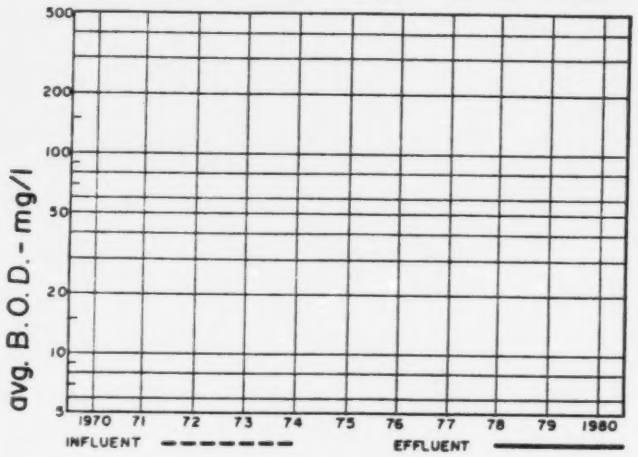
DESIGN CAPACITY : 1.636 1000 M3 DESIGN BOD5 : 150.0 MG/L DESIGN SUSP.SOLIDS : 150.0 MG/L

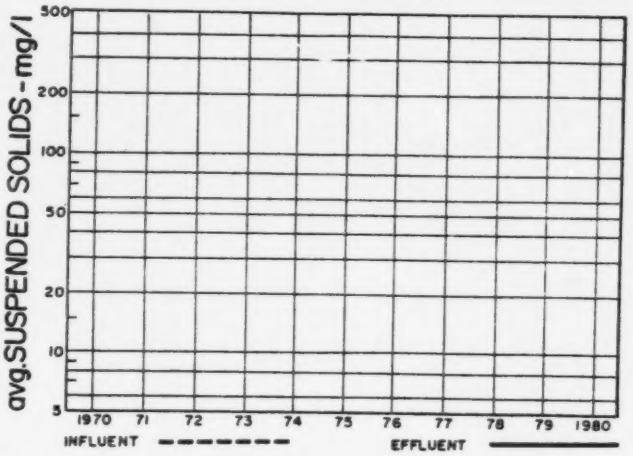
	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
					INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	26.735	.864	1.146		53.0	3.5	93	1.3	110.0	.5	99	2.9	4.8	3.6	25	.032
FEB	26.089	.932	1.200		88.0	2.5	97	2.2	158.0	.5	99	4.1	7.4	3.9	47	.091
MAR	34.422	1.109	2.114		107.0	2.8	97	3.5	213.0	5.0	97	7.1	7.2	3.3	54	.134
APR	51.910	1.730	2.645		29.5	2.2	92	1.4	145.0	.5	99	7.5	1.9	.5	69	.089
MAY	54.000	1.742	2.455		33.0	2.7	91	1.6	57.5	5.0	91	2.8	3.1	2.1	33	.057
JUN	53.216	1.774	2.700		39.5	2.0	94	1.9	95.0	5.0	94	4.7	4.1	2.3	44	.098
JUL	40.091	1.293	2.450		57.5	1.8	96	2.2	155.0	5.0	96	6.0	7.8	3.2	58	.184
AUG	57.419	1.852	2.941		60.0	1.3	97	3.3	70.0	.5	99	3.9	4.4	3.2	27	.069
SEP	66.407	2.214	3.946		28.0	3.3	88	1.6	62.5	.5	99	4.1	3.0	1.6	46	.093
OCT	66.052	2.130	3.669		70.0	2.5	96	4.4	167.5	.5	99	11.0	5.1	1.7	66	.223
NOV	60.498	2.017	3.387		96.5	2.0	97	5.7	160.0	.5	99	9.6	6.4	1.8	71	.278
DEC	44.833	1.446	1.759		35.0	1.0	97	1.5	67.5	.5	99	3.0	4.4	2.7	38	.078
TOTAL	581.672							31.1				67.1				1.404
AVERAGE		1.592			58.0	2.3	96		121.7	2.0	98		4.9	2.5	49	
MAXIMUM			3.946													
NO. OF SAMPLES					24	23			24	52			24	23		

WICKSTEED (HORNEPAYNE)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001952 HORNEPAYNE WPCP

MUNICIPALITY : WICKSTEED (HORNEPAYNE)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 1,619
POPULATION SERVED : 1,625
PERCENT SERVED : 100.3

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.383 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG
JAN/79-DEC/79																
JAN	11.951	.386			(DATA NOT AVAILABLE)				(DATA NOT AVAILABLE)				(DATA NOT AVAILABLE)			
FEB	8.206	.823														
MAR	29.276	.946														
APR	25.357	.845														
MAY		.937														
JUN	21.698	.723														
JUL	13.260	.428														
AUG	20.875	.673														
SEP	19.159	.639														
OCT	29.101	.944														
NOV	28.321	.742														
DEC	22.988	.741														
TOTAL	230.192															
AVERAGE		.736														
MAXIMUM																
NO. OF SAMPLES																

Ministry of the Environment
Ontario

Northwestern Region

⑥

REGIONAL OFFICE
THUNDER BAY
435 James St. S.
P.O. Box 5000
807-475-1205

DISTRICT OFFICE
Kenora
808 Robertson St.
807-468-5578

Northwestern Region

⑥

Ontario

Ministry of the Environmer

DESIGN DATA - METRIC

EAR FALLS

PROJECT: Ear Falls Twp. WPCP

PROJECT NO: 1-0061-67

DESIGN FLOW: 2.463 $10^3 m^3/d$

DESIGN BOD: 200 mg/l

DESIGN SS: 310 mg/l

TREATMENT Extended Aeration

LIFT STATION:
Pumps: 2 Type: FLYGT Star Delta
Size: 1750 r min.

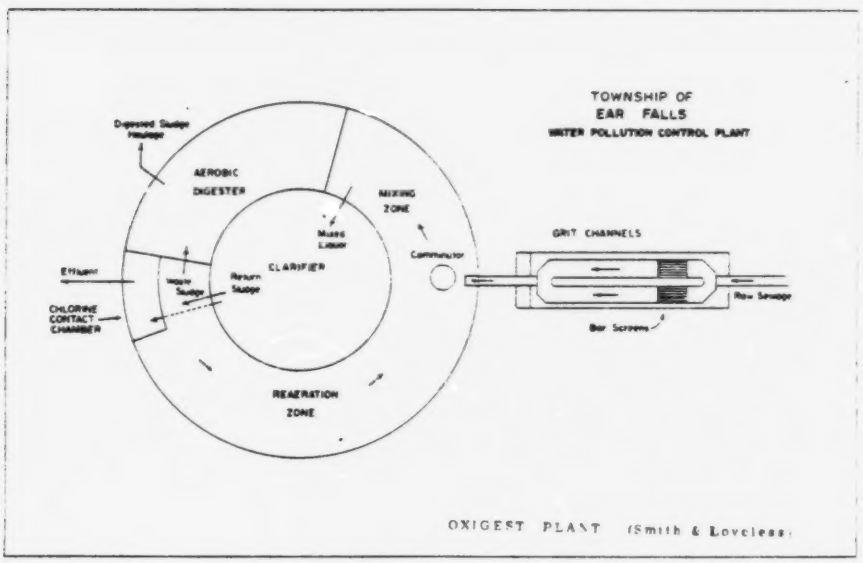
GRIT CHAMBERS:
2, .5m w x 4.6m L x .5m swd equipped with bar screens
Volume (each) 1.2 m^3 Detention (each) 3 min.

AERATION TANK:
(Mixing and Reaeration zones)
6.0m W x 4.6m swd x 262° arc
Volume: 264.6 m^3 Detention 10.0 hours
Comminutor: Type: HELIGEAR Size: 1725 rpm. .19kW
Blowers: 3 type ROOTS-CONNERSVILLE
Size: 925 rpm 11.2 kw 114.0 l/s 48.3 kPa

CLARIFIER:
5.9m i.d. x 3.5m swd
Volume 127.3 m^3 Detention 4.8 hours

AEROBIC DIGESTER:
6.0m W x 4.6m swd x 98° arc
Volume 108.2 m^3 Detention 4.1 hours

CHLORINE CONTACT CHAMBER:
1.1m W x 4.6m swd x 30° arc
Volume 15.2 m^3 Detention 34 minutes
Chlorinator: Type: Wallace & Tiernan
Size: 1.5 l/s



DESIGN DATA - IMPERIAL

Project Ear Falls Twp WPCP
Project No. 1-0061-67
Design Flow 0.6 MIGD
Design BOD 280 mg/l
Design SS 310 mg/l

LIFT STATION:
Pumps: 2 Type: FLYGT Star Delta
Size: 1750 rpm

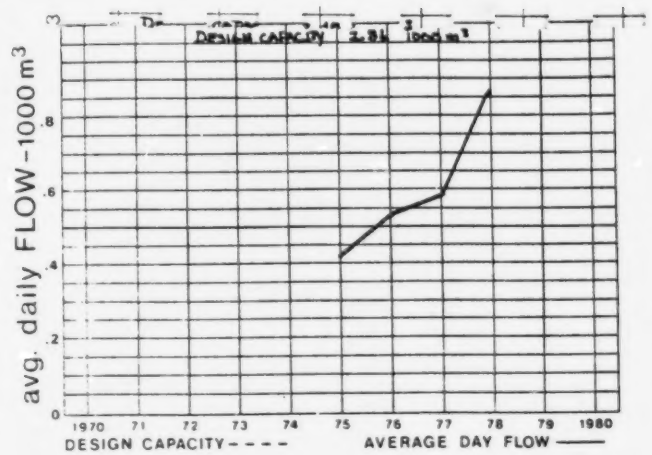
GRIT CHANNELS:
2, 1.6' w x 15.0'1 x 1.8' swd equipped with bar screens
Volume (each) 270 I.G. Detention (each) 3 min.

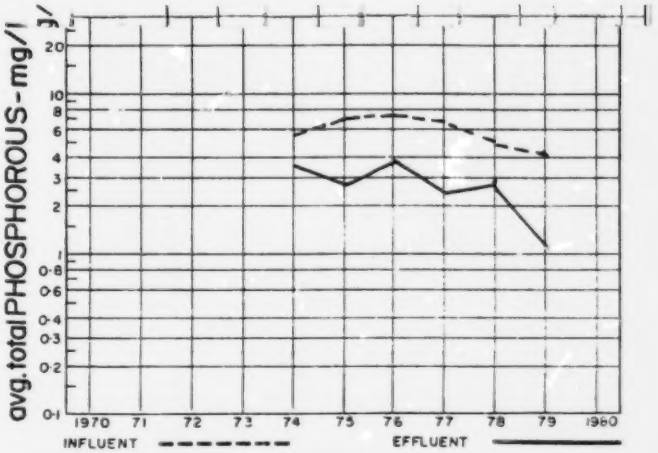
AERATION TANK:
(Mixing and Reaeration zones)
19.65' w x 15.25' swd x 262° arc
Volume: 58,200 I.G. Detention 10.0 hours
Comminutor: Type: HELIGEAR Size: 1725 rpm, ¼ HP
Blowers: 3 type ROOTS-CONNERSVILLE
Size: 925 rpm 15 HP 275 cfmct 7 psi

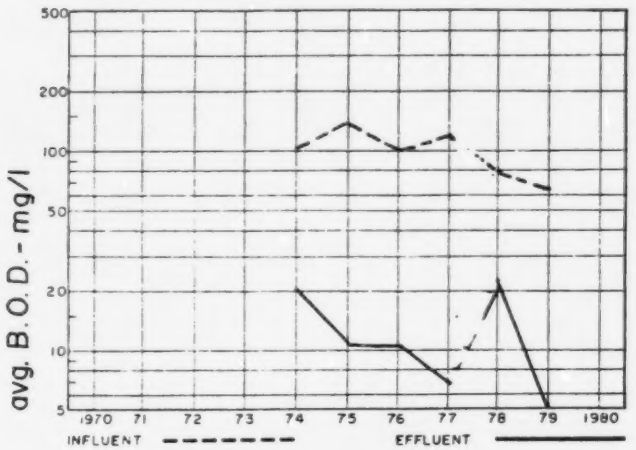
CLARIFIER:
19.25' i.d. x 12.4' swd
Volume 26,000 I.G. Detention 4.8 hours

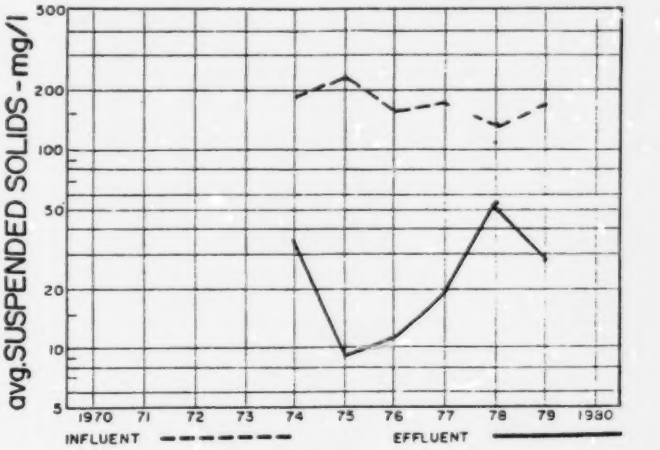
AEROBIC DIGESTER:
19.65' w x 15.25' swd x 98° arc
Volume 23,800 I.G. Detention 4.1 hours

CHLORINE CONTACT CHAMBER:
3.5w x 15.25' swd x 30° arc
Volume 3350 I.G. Detention 34 minutes
Chlorinator: Type: Wallace & Tiernan
Size: 20 gpm









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001006 EAR FALLS WPCP

MUNICIPALITY : EAR FALLS
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
CONVERT TO OTHER OPERATING MODE

CURRENT POPULATION : 2,036
POPULATION SERVED : 1,900
PERCENT SERVED : 93.3

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.883 1000 M3 DESIGN BOD5 : 280.0 MG/L DESIGN SUSP.SOLIDS : 310.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION					REDUCTION				REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	46.454	1.499			130 0	5.5	95	5.7	200.0	15.0	92	8.5	6.2	1.2	80	.232
FEB	30.000	1.071			60.0	7.5	87	1.5	170.0	25.0	85	4.3	4.4	1.4	68	.090
MAR	30.140	.972			80.0	9.0	88	2.1	195.0	40.0	79	4.6	4.4	1 7	61	.081
APR	20.886	.696	.696		80.0	11.0	86	1.4	295.0	32.0	89	5.4	4 7	1.3	72	.071
MAY	55.000	1.770		7.500	80.5	4.1	94	4.2	165.0	15.0	90	8.2	4.0	.6	83	.184
JUN	27.700	.923	.980	1.250	65.4	3.8	94	1.7	149.0	25.0	83	3.4	3.8	1.0	72	.076
JUL	12 648	.408	.620	1.590	47.0	5.3	88	.5	113.0	40.0	64	.9	4.5	1.9	58	.034
AUG	21.655	.698	1.912	2.500	38.2	5.9	84	.7	153.7	67.5	56	1.8	2.8	2 8		
SEP	18.774	.624	1.177	2.500	39.0	2.1	94	.6	164.0	10.0	93	2.8	3.4	.6	82	.053
OCT	15.814	.510	1.136	2.500	59.0	2.3	96	.8	170.0	16.0	90	2.4	4.0	.6	84	.053
NOV	19.054	.635	1.289	2.500	44.0	2.4	94	.7	117.0	18.7	84	1.8	3.6	.4	88	.061
DEC	16.090	.583	1.269	1.350	37.4	3.0	91	.6	127.0	28.0	77	1.7	3.3	.7	78	.047
TOTAL	316.215							21.0				46.5				.982
AVERAGE		.866			63.3	5.1	91		168.2	27.6	83		4.1	1.1	70	
MAXIMUM			1.912	7.500												
NO. OF SAMPLES					43	43			43	43			43	43		

962

DESIGN DATA - METRIC

GERALDTON

PROJECT Town of Geraldton

PROJECT NO. 1-0041-66

TREATMENT Extended aeration

DESIGN FLOW 1.8 $10^3 m^3/d$

BOD - 230 mg/l

PRETREATMENT

Grit Removal

Type: Grit channels
Size: Twin 7.6m x 0.6m x 0.2m deep

SECONDARY TREATMENT

Aeration Tank

Volume: 51.6m^3
Loading: 416.4 kg BOD/day

Clarifier

Surface Area: 122.6m^2
Overflow Rate: 14.7 $m^3/m^2 \cdot d$

SLUDGE HANDLING

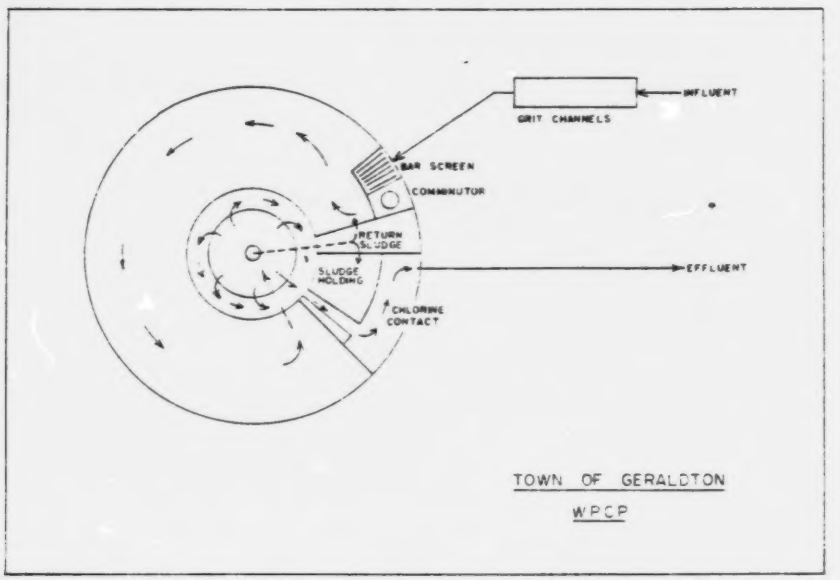
Holding Tank

Volume: 56.6m^3

CHLORINATION

Chlorination Contact Chamber

Volume 31 m^3
Retention: 30 min.



TOWN OF GERALDTON

WPCP

DESIGN DATA - IMPERIAL

PROJECT TOWN OF GERALDTON

PROJECT NO. 1-0041-66
TREATMENT Extended aeration
DESIGN FLOW 0.4 MGD

BOD - 230 mg/l

PRETREATMENT

Grit Removal

Type: Grit channels
Size: Twin 25' x 2' x 0.72' deep

SECONDARY TREATMENT

Aeration Tank

Volume: 11,[illegible] gal
Loading: 918 [illegible] lb/day

Clarifier

Surface Area: 132 ft^2
Overflow Rate: 360 [illegible]

SLUDGE HANDLING

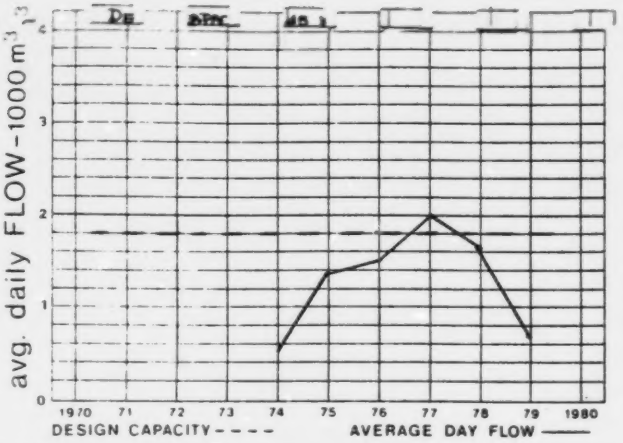
Holding Tank

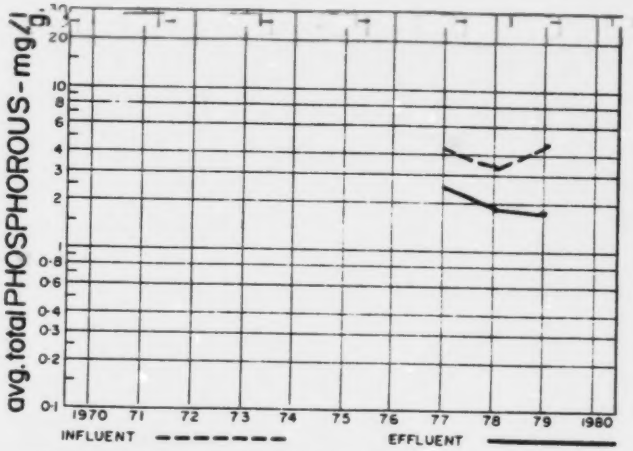
Volume: 2000 $ft.^3$

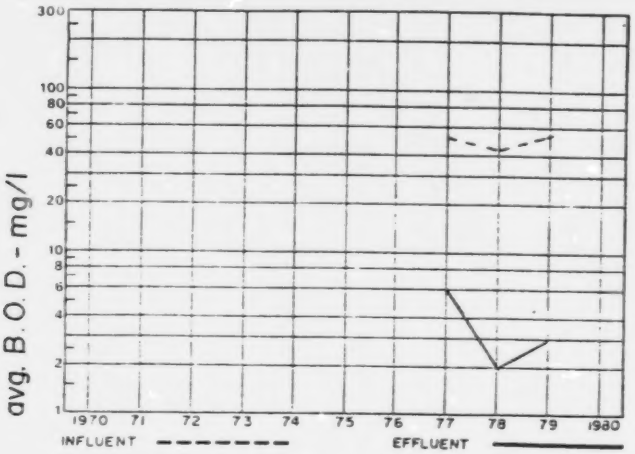
CHLORINATION

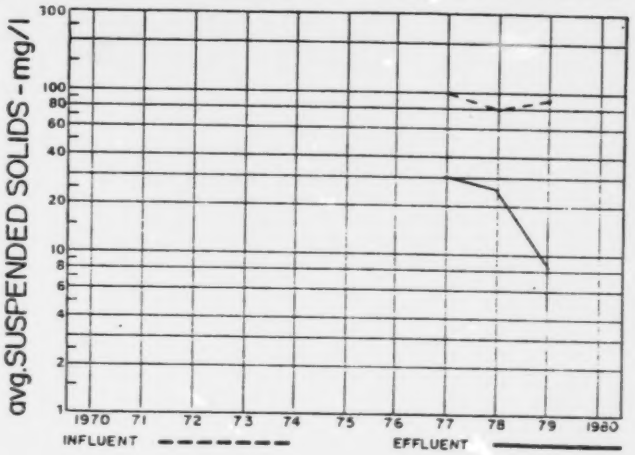
Chlorination Contact Chamber

Volume: 1110 ft^3
Retention: 30 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001649 GERALDTON W P C P

MUNICIPALITY GERALDTON
REGION 06 NORTHWESTERN

TREATMENT FACILITY EXT AERATION/CONT STABLIZATION
CONVERT TO OTHER OPERATING MODE

* DATA NOT AVAILABLE

CURRENT POPULATION : 3,010
POPULATION SERVED : 3,000
PERCENT SERVED : 99.6

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.818 1000 M3 DESIGN BOD5 : 230.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	36.608	1.181	2.045		106.0	.8	99	3.8	126.0	3.3	97	4.4	5.8	*		
FEB	*	*			*	*			*	*			*	*		
MAR	57.102	1.842	3.973		65.0	2.2	96	3.5	155.0	7.5	95	8.4	5.9	1.3	77	.263
APR	*	*			*	*			*	*			*	*		
MAY	12.327	.397	.400		29.0	8.5	70	.2	58.0	13.7	76	.5	2.3	1.4	39	.011
JUN	11.819	.394	.409		37.7	2.1	94	.4	60.0	7.5	87	.6	2.8	1.7	39	.013
JUL	9.874	.318	.412		43.0	4.4	89	.3	68.0	6.2	90	.6	6.5	2.1	67	.043
AUG	8.526	.275	.367		61.0	1.8	97	.5	95.0	8.7	90	.7	4.5	2.6	42	.016
SEP	7.866	.262	.370		75.0	.8	98	.5	95.0	10.0	89	.6	4.3	2.2	48	.017
OCT	*	*			*	*			*	*			*	*		
NOV	*	*			*	*			*	*			*	*		
DEC	*	*			*	*			*	*			*	*		
TOTAL	144.122							9.5				16.0				.363
AVERAGE		.667			59.5	2.9	95		93.8	8.1	91		4.5	1.8	58	
MAXIMUM			3.973													
NO. OF SAMPLES					22	22			22	22			22	19		

DESIGN DATA - METRIC

IGNACE

PROJECT: Ignace Twp. WPCP

PROJECT NO: 1-0060-67

DESIGN FLOW: 0.95 10^3 m^3/d
Contact Stabilization
2.5 $10^3 m^3$/d
Extended Aeration

DESIGN POPULATION: 2500

BOD: Raw Sewage - 129.1 kg/d

PRETREATMENT

PUMPING STATION:
Pumps: Two, Type: FLYGT CP3151
Size: 42.3 l/s @ 18.0m TDH

Bar Screen at pumping station inlet

GRIT CHANNELS:
Two, 7.6m x .6m x .6m swd
Volume: (each) 2.8 m^3
Detention: (each) 4.2 min.

BIOLOGICAL TREATMENT (Extended Aeration)

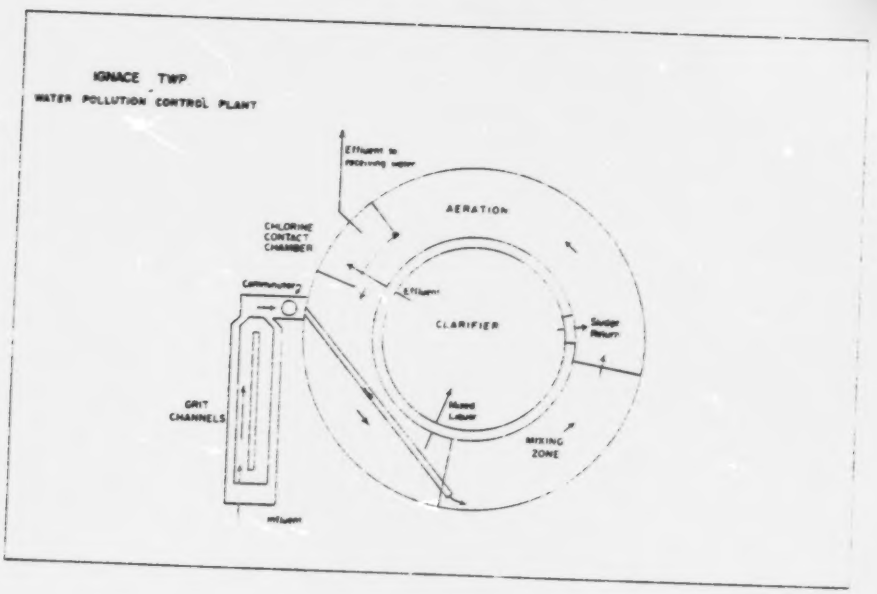
MIXING ZONE:
Volume: 112.2 m^3 Detention: 3.0 hours

AERATION ZONE:
Volume: 513.7 m^3

Blowers, Two, Type: Roots Connersville RAIBF
Size: 246.6 l/s

SETTLING ZONE:
7.1 m dia. x 3.81 m swd
Volume: 168.2 m^3 Detention: 4.2 hours
Overflow Rate: 24.4 m^3/m^2.d

CHLORINE CONTACT ZONE
Volume: 19.5 m^3 Detention: 29 min.



DESIGN DATA - IMPERIAL

Project: Ignace Twp. WPCP

Project No: 1-0060-67
Design Flow: 0.21 MGD
Contact Stabilization
0.55 MGD
Extended Aeration
Design Population: 2500
BOD: Raw Sewage - 285 lb/day

PRETREATMENT

PUMPING STATION:
Pumps: Two, Type: FLYGT CP3151
Size: 670 USGPM at 59' TDH

Bar Screen at pumping station inlet

GRIT CHANNELS:
Two, 25' x 2' x 2' swd
Volume: (each) 624 l. Gal.
Detention: (each) 4.2 min.

BIOLOGICAL TREATMENT (Extended Aeration)

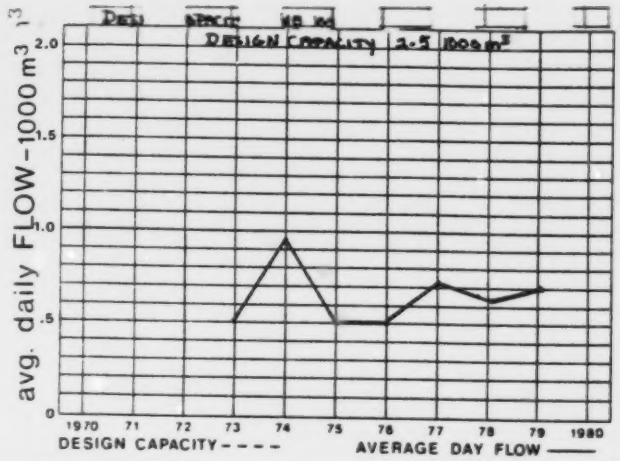
MIXING ZONE:
Volume: 30,000 l. Gal. Detention: 3 hours

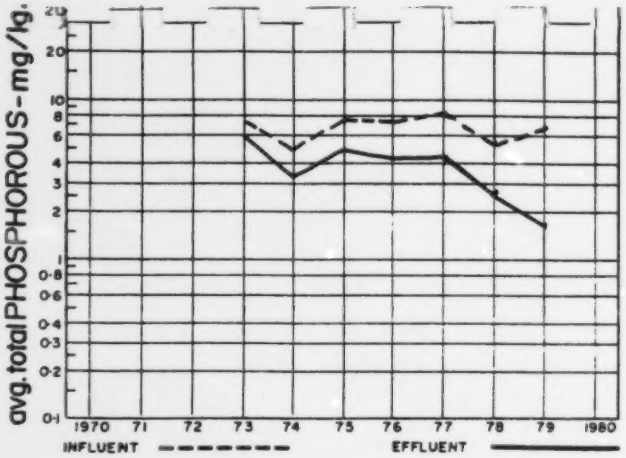
AERATION ZONE:
Volume: 113,000 l. Gal.

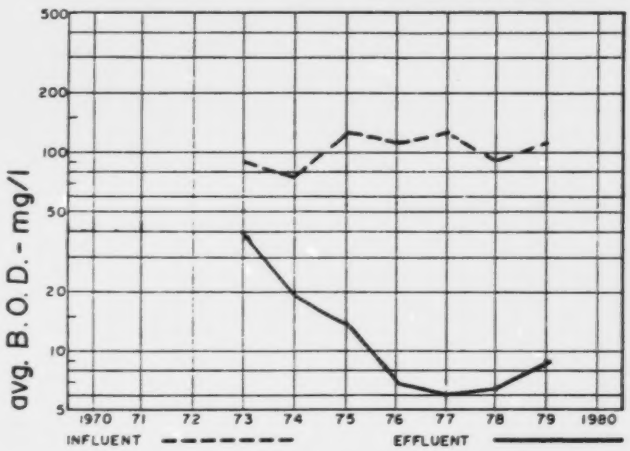
Blowers, Two, Type: Roots Connersville RAI-B
Size: 590 cfm

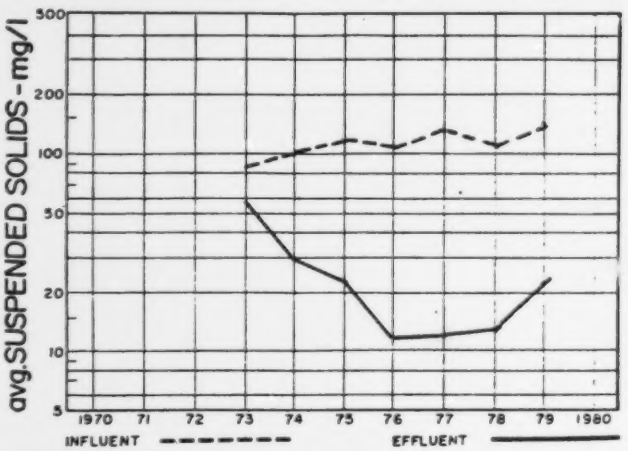
SETTLING ZONE:
23'-3" dia. x 12.6' swd
Volume: 37,000 l. Gal. Detention: 4.2 hours
Overflow Rate: 500 l. Gal/ft^2 day

CHLORINE CONTACT ZONE:
Volume: 4300 l. Gal. Detention: 29 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001355 IGNACE W P C P

MUNICIPALITY : IGNACE
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
CONVERT TO OTHER OPERATING MODE

CURRENT POPULATION : 2,131
POPULATION SERVED : 2,500
PERCENT SERVED : 117.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.500 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	20.425	.659	3.850		95.0	17.0	82	1.5	170.0	35.0	79	2.7	5.4	1.2	77	.086
FEB	18.819	.672	.513		117.0	20.6	82	1.8	145.0	49.2	66	1.8	6.7	1.7	74	.094
MAR	18.486	.592			127.0	14.1	88	2.0	157.0	29.2	81	2.3	5.7	1.2	78	.083
APR	16.916	.564	1.022		84.0	8.3	90	1.2	135.0	31.0	77	1.7	5.6	1.3	76	.073
MAY	19.556	.631	1.112		98.8	8.5	91	1.7	102.5	21.3	79	1.5	6.2	.8	86	.105
JUN	17.336	.578	1.109		115.0	6.3	94	1.8	170.0	15.0	91	2.6	6.9	.9	86	.104
JUL	21.731	.701	1.413		127.0	5.3	95	2.6	160.0	15.0	90	3.1	7.3	1.5	79	.126
AUG	23.706	.765	.924		170.0	3.2	98	3.9	270.0	15.0	94	6.0	7.9	1.7	78	.147
SEP	31.930	1.064	1.061		90.0	5.8	93	2.6	115.0	15.0	86	3.1	7.0	3.9	44	.099
OCT	30.454	.982	.954		105.0	4.0	96	3.0	188.0	10.0	94	4.8	6.7	3.8	43	.088
NOV	29.738	.991	1.643		78.0	6.5	91	2.1	75.0	15.0	80	1.7	5.6	2.3	58	.098
DEC	30.752	.992	1.676		63.0	4.9	92	1.7	113.0	17.0	84	2.9	6.0	1.1	81	.151
TOTAL	279.851							26.7				34.8				1.254
AVERAGE		.766			105.8	8.7	91		148.3	22.3	84		6.4	1.7	72	
MAXIMUM			3.850													
NO. OF SAMPLES					38	43			38	43			34	49		

092

DESIGN DATA - METRIC

LONGLAC

PROJECT Twp. of Longlac WPCP

PROJECT NO. 1-0014-66

TREATMENT: Contact Stabilization

DESIGN FLOW: 2.5 $10^3 m^3/d$

BOD: Raw Sewage 200 mg/l

PRETREATMENT

GRIT CHAMBERS:
Two, each 6.4m x .5m x .6m swd
Volume (each): 1.8 m^3
Detention (each) 2.7 min.

COMMINUTOR:
Type: A JOR

BIOLOGICAL TREATMENT

MIXING TANK:
Volume: 118.2 m^3 Detention: 3 hours

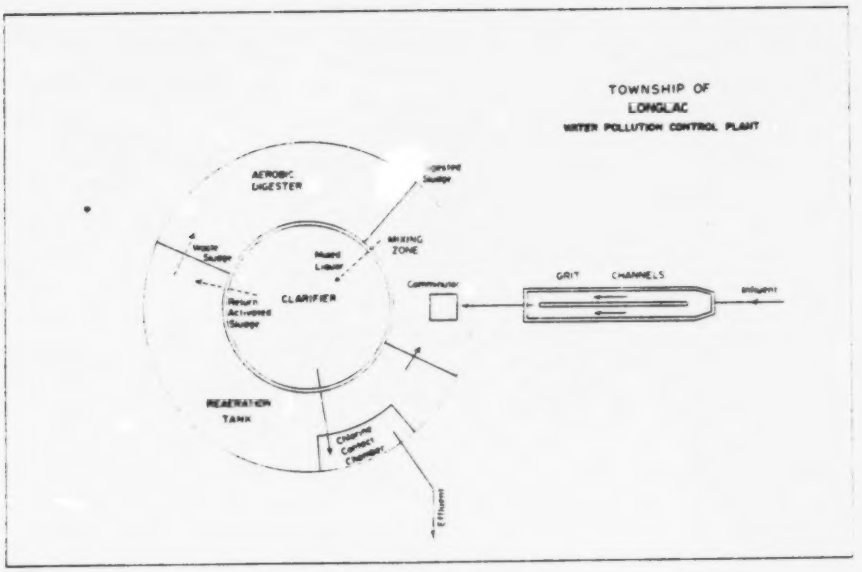
SETTLING TANK
Volume: 168.2 m^3 Detention: 4.2 hours
Overflow Rate: 28.2 $m^3/m^2 \cdot d$

REAERATION TANK
Volume: 300.0 m^3

Blowers: Two Type SUTORBILT 8HB
Size: 248.6 l/s at 62.1 kW

AEROBIC DIGESTER
Volume: 212.8 m^3

CHLORINE CONTACT CHAMBER.
Volume: 19.5 m^3
Detention: 30 min.



DESIGN DATA - IMPERIAL

PROJECT Twp of Longlac WPCP
Project No: 1-0014-66
Treatment: Contact Stabilization
Design Flow: 0.54 MIGD
BOD: Raw Sewage 425 lb. BOD/day

PRETREATMENT

GRIT CHANNELS:
Two, each 21' x 1.5' x 2' swd
Volume (each): 393 I. Gal.
Detention (each) 2.7 min.

COMMINUTOR
Type: A JOR

BIOLOGICAL TREATMENT

MIXING TANK:
Volume: 26,000 I. Gal. Detention: 3 hours

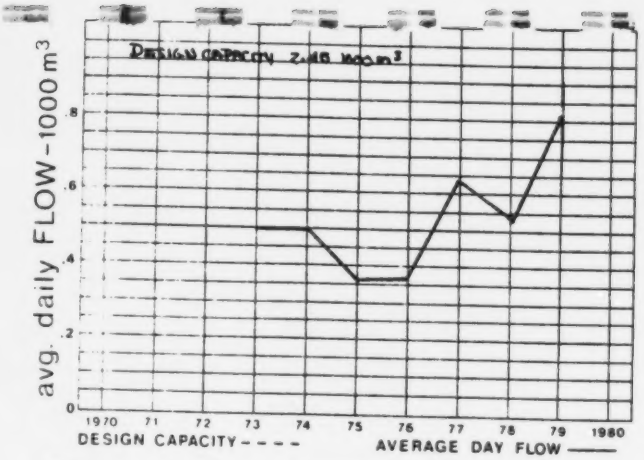
SETTLING TANK
Volume: 37,000 I. Gal. Detention: 4.2 hours
Overflow Rate: 577 I. Gal/ft^2/day

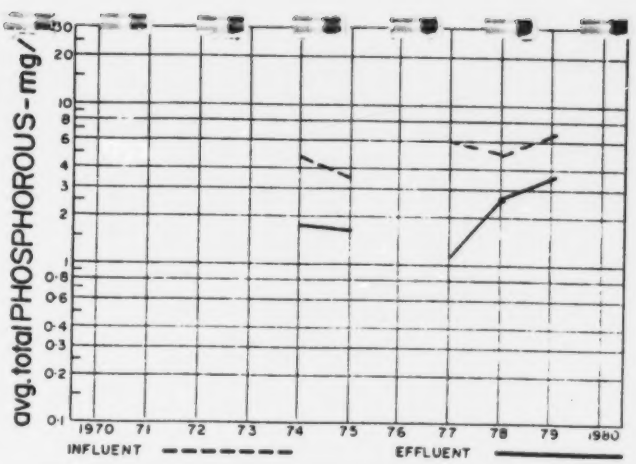
REAERATION TANK:
Volume: 66,000 I. Gal.

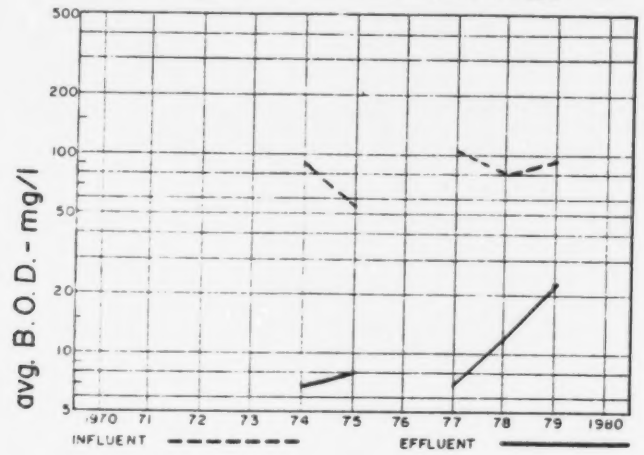
Blowers: Two Type SUTORBILT 8HB
Size: 590 cfm at 9 psi

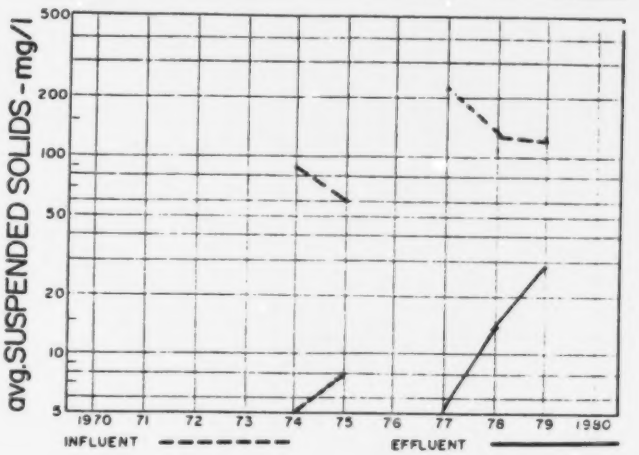
AEROBIC DIGESTER:
Volume: 46,800 I. Gal.

CHLORINE CONTACT CHAMBER
Volume: 4300 I. Gal.
Detention: 30 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001042 LONGLAC W P C P

MUNICIPALITY : LONGLAC
REGION : 06 NORTHWESTERN

TREATMENT FACILITY EXT AERATION/CONT STABLIZATION

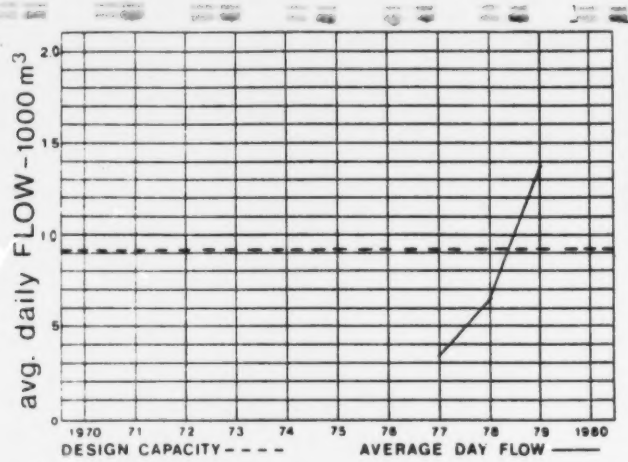
* DATA NOT AVAILABLE

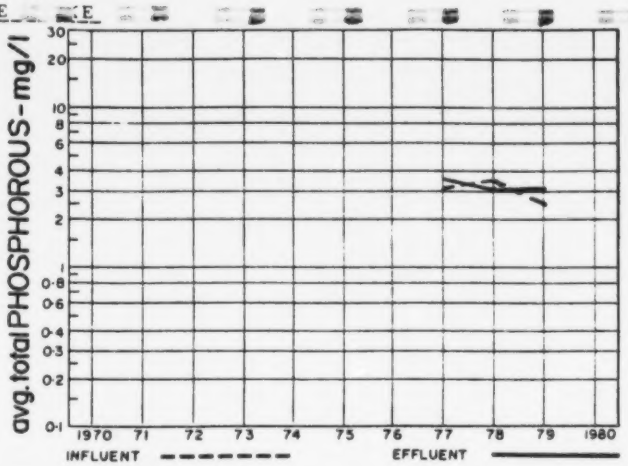
CURRENT POPULATION : 2,189
POPULATION SERVED : 2,500
PERCENT SERVED : 114.2

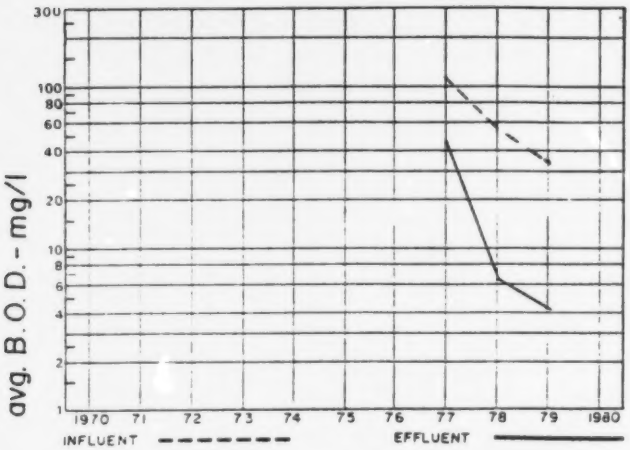
OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

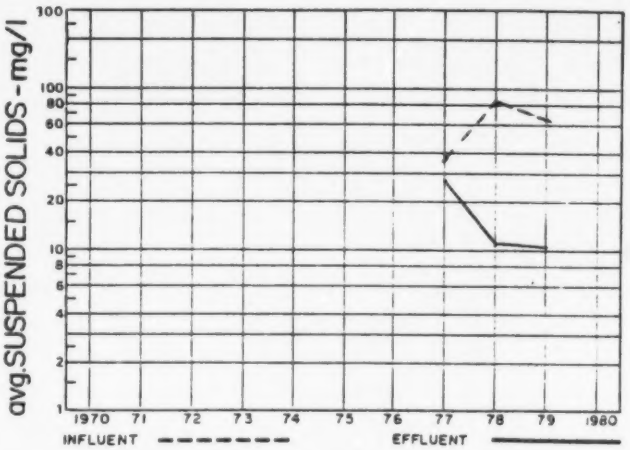
DESIGN CAPACITY : 2.454 1000 M3 DESIGN BODS : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	*	*			170.0	37.0	78		180.0	30.0	83		9.5	4.8	49	
FEB	10.110	.361	.400		190.0	7.0	96	1.8	200.0	5.0	97	1.9	8.6	7.1	17	.015
MAR	16.115	.519	1.368		100.0	30.0	70	1.1	160.0	35.0	78	2.0	8.0	5.4	32	.042
APR	32.017	1.067	2.282		65.0	34.0	47	.9	95.0	40.0	57	1.7	5.1	3.3	35	.058
MAY	39.759	1.282	1.913		60.0	12.0	80	1.9	90.0	25.0	72	2.9	3.3	1.6	51	.068
JUN	35.104	1.170	1.800		52.5	3.9	92	1.7	87.5	10.0	88	2.7	4.1	1.1	72	.104
JUL	23.175	.827	.904		70.0	23.0	67	1.0	90.0	15.0	83	1.7	4.7	4.5	4	.005
AUG	17.947	.598	.859		120.0	11.0	90	1.9	130.0	15.0	88	2.0	5.9	1.1	81	.086
SEP	19.002	.633	.963		100.0	50.0	50	9	150.0	45.0	70	1.9	7.1	6.0	15	.021
OCT	28.698	.925	2.718		50.0	12.0	76	1.0	120.0	30.0	75	2.5	6.3	1.2	80	.146
NOV	*	*			*	*			*	*			*	*		
DEC	20.402	.658	.872		70.0	34.0	51	.7	120.0	75.0	37	.9	6.0	3.7	38	.047
TOTAL	242.329							13.4				20.3				592
AVERAGE		.804			95.2	23.0	75		129.3	29.5	77		6.2	3.6	41	
MAXIMUM			2.718													
NO. OF SAMPLES					12	12			12	12			12	12		









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002185 PICKLE LAKE WPCP

MUNICIPALITY : PICKLE LAKE
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 744
POPULATION SERVED : 900
PERCENT SERVED : 120.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	9.364	.300			41.0	3.6	91	.3	58.0	15.0	74	.4	3.1	3.2	-	
FEB	9.310	.331			20.0	2.9	85	.1	35.0	15.0	57	.1	1.6	3.2	-	-
MAR	11.915	.381			48.0	3.2	93	.5	78.0	10.0	87	.8	2.4	2.8	-	-
APR	10.878	.359			27.7	4.5	83	.2	33.3	11.6	65	.2	2.2	2.7	-	-
MAY	9.717	.309			34.0	6.0	82	.2	35.0	10.0	71	.2	2.7	3.7	-	-
JUN	13.833	4.591			48.5	7.3	84	.5	68.7	13.8	79	.7	2.7	3.8	-	-
JUL	15.108	4.864			47.0	5.8	87	.6	92.0	7.6	91	1.2	3.4	3.7	-	-
AUG	9.933	.318			24.7	6.4	74	.1	35.0	8.5	75	.2	2.5	3.5	-	-
SEP	8.569	.285	.420		33.0	3.9	88	.2	81.0	10.0	87	.6	1.8	3.3	-	-
OCT	8.284	.267	.386		42.8	4.8	88	.3	100.0	9.0	91	.7	3.4	2.9	14	.004
NOV	9.660	.322	1.375		34.0	1.7	95	.3	83.7	8.3	86	.5	2.6	2.7	-	
DEC	12.414	.400	.660		29.3	2.1	92	.3	55.0	8.3	84	.5	1.7	2.6	-	-
TOTAL	128.985							4.1				6.6				.004
AVERAGE		1.061			35.8	4.3	87		61.2	10.5	82		2.5	3.1	-	
MAXIMUM			1.375													
NO. OF SAMPLES					43	42			43	42			43	42		

DESIGN DATA - METRIC

RED LAKE

PROJECT Red Lake Twp. WPCP

PROJECT NO. 1-0040-66

TREATMENT Contact Stabilization

DESIGN FLOW 1.13 $10^3 m^3/d$

BOD - Raw Sewage 231.3 kg/d

RAW SEWAGE PUMPING:
Pumping Station 1
Two, 27.13 l/s @ 20.7m TDH

Pumping Station 2
Two. 7.9 l/s @ 15.5m TDH

PRETREATMENT

GRIT CHANNELS:
Two, each 6.1m x .6m x .9m swd
Volume: (each) $3.0 m^3$. Detention: (each) 3 min.

BAR SCREENS:
.6cm x 5cm steel bats on 2.4cm centres

BIOLOGICAL TREATMENT

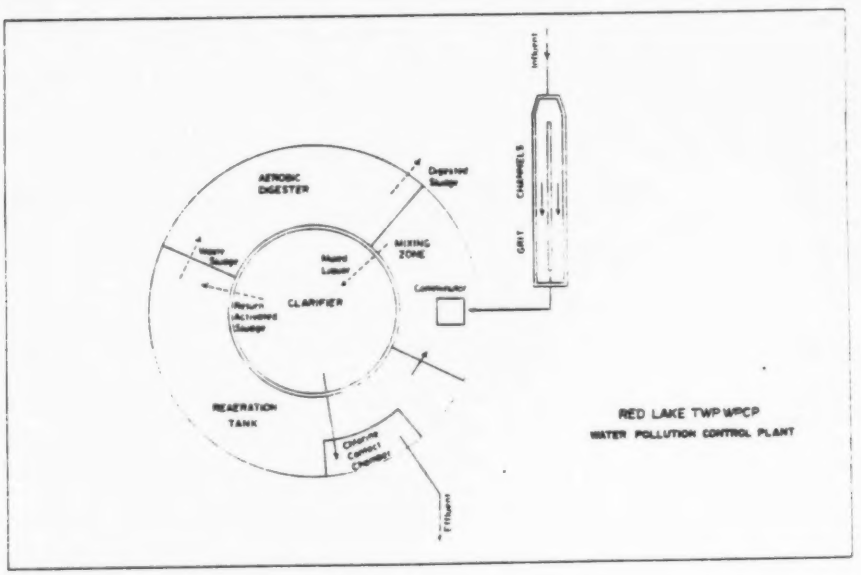
MIXING TANK:
Volume: $151.8 m^3$
Contact Time: 2.7 hours

REAERATION TANK:
Volume: $351.4 m^3$

CLARIFIER:
7.6m dia. x 4.6m swd
Volume: $219.1 m^3$
Detention: 3.9 hours
Overflow Rate: $28.4 m^3/m^2.d$

AEROBIC DIGESTER:
Volume: $218.2 m^3$

CHLORINE CONTACT CHAMBER:
Volume: $38.2 m^3$
Detention: 40 min.



DESIGN DATA - IMPERIAL

PROJECT Red Lake Twp. WPCP

PROJECT NO. 1-0040-66

TREATMENT Contact Stabilization

DESIGN FLOW 0.250 MIGD

BOD - Raw Sewage 510 lb/day

RAW SEWAGE PUMPING:
Pumping Station 1
Two, 430 USGPM at 69' TDH

Pumping Station 2
Two, 123 USGPM at 51' TDH

PRETREATMENT

GRIT CHANNELS:
Two, each 20' x 2' x 2'9" swd
Volume: (each) 650 I. Gal. Detention: (each) 3 min.

BAR SCREENS:
1"x 2" steel bars on 2" centers

BIOLOGICAL TREATMENT

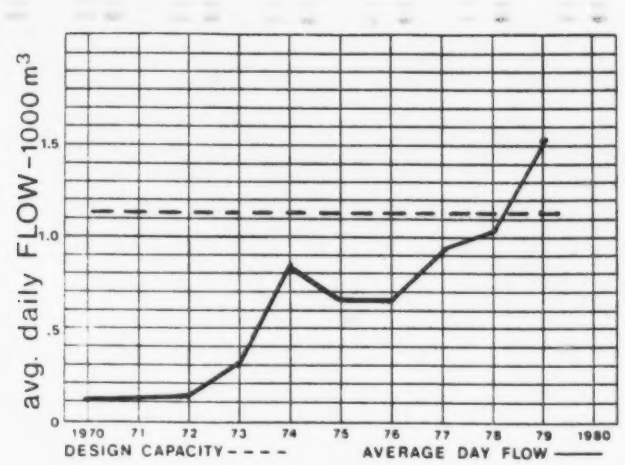
MIXING TANK:
Volume: 33,400 I. Gal.
Contact Time: 2.7 hours

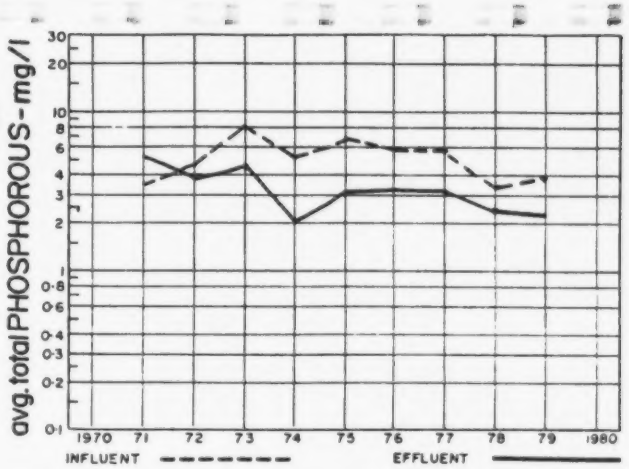
REAERATION TANK:
Volume: 77,400 I. Gal.

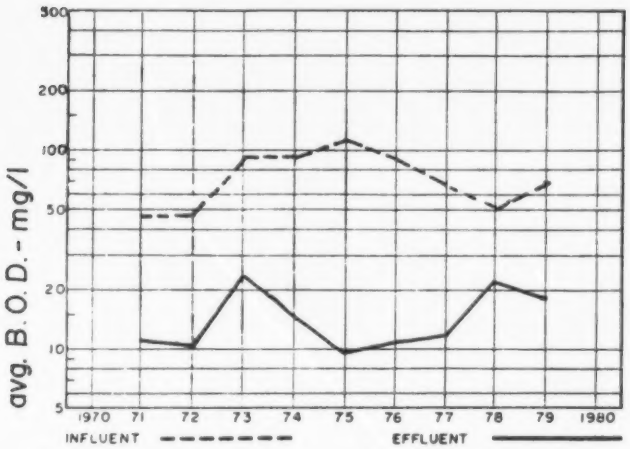
CLARIFIER:
25'6" dia. x 15' swd
Volume: 48,200 I. Gal.
Detention: 3.9 hours
Overflow Rate: 560 I. Gal/ft²/day

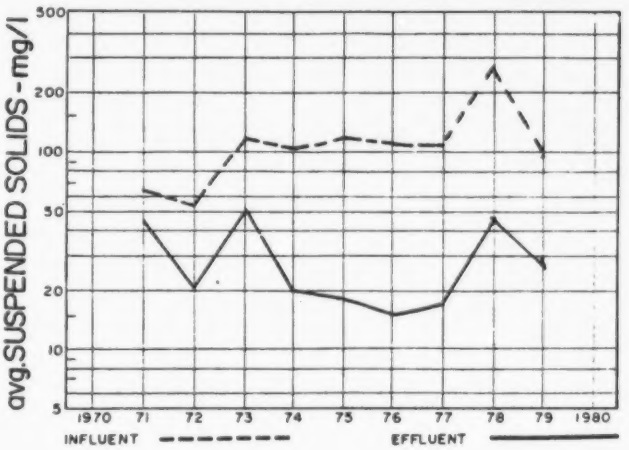
AEROBIC DIGESTER:
Volume: 48,000 I. Gal.

CHLORINE CONTACT CHAMBER:
Volume: 8400 I. Gal.
Detention: 40 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001131 RED LAKE W P C P

MUNICIPALITY : RED LAKE
REGION : 08 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

* DATA NOT AVAILABLE

CURRENT POPULATION : 2,179
POPULATION SERVED : 1,200
PERCENT SERVED : 55.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.136 1000 M3 DESIGN BODS : 204.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	55.147	1.778	1.900		95.0	40.0	57	3.0	120.0	30.0	75	4.9	4.6	3.8	17	.044
FEB	42.269	1.509			85.0	20.0	76	2.7	140.0	25.0	82	4.8	4.5	2.5	44	.085
MAR	48.879	1.577			50.0	18.0	64	1.5	95.0	20.0	78	3.6	3.3	2.6	21	.034
APR	53.742	1.791	4.042		75.0	8.0	89	3.6	105.0	15.0	85	4.8	4.2	2.0	52	.118
MAY	46.114	1.488	2.246		56.0	33.0	41	1.0	82.0	62.0	24	.9	3.6	2.6	27	.046
JUN	41.622	1.387			66.0	46.0	30	.8	65.0	55.0	15	.4	3.8	3.3	13	.021
JUL	44.678	1.441			42.0	15.0	64	1.2	70.0	30.0	57	1.7	2.9	2.1	27	.036
AUG	42.424	1.369			80.0	3.0	96	3.2	110.0	25.0	77	3.6	3.8	1.4	63	102
SEP	42.781	1.426			46.0	5.5	88	1.7	85.0	10.0	88	3.2	5.8	2.3	60	.150
OCT	41.758	1.347			75.0	*			130.0	*			4.2	2.3	45	.079
NOV	45.989	1.533			95.0	16.0	83	3.6	115.0	15.0	86	4.5	5.1	2.0	60	.143
DEC	50.889	1.642			32.0	8.5	73	1.1	60.0	20.0	66	2.0	2.0	2.2	-	-
TOTAL	556.292							23.8				34.9				.858
AVERAGE		1.524			66.4	19.3	70		98.0	27.9	71		3.9	2.4	39	
MAXIMUM			4.042													
NO. OF SAMPLES					17	14			17	14			18	15		

DESIGN DATA - METRIC

SCHREIBER

PROJECT Municipality of Schreiber

PROJECT NO. 1-0072-67
TREATMENT Extended Aeration

BOD Raw Sewage 450 mg/l
SS Raw Sewage 240 mg/l

PRETREATMENT

Grit Channels

Twin

SECONDARY TREATMENT

Aeration Tanks

Contact Volumes: 94.6 m^3
Reaeration Volume: 220.9 m^3
Loading: 408.0 kg BOD/1000 m^3
Contact Retention: 2 hr
Reaeration Retention: 4.67 hr.
Total Area: 68.8m^2

Air Supply

Total: 417.9 l/s
No. of blowers: 2
Each blower provides 389.5 l/s @ 845 r.p.m.
using a 37.3 kw motor

Secondary Sedimentation

Area 67.5 m^2
Volume: 248.2 m^3
Loading: surface, 16.8 m^3/m^2-d
Retention: 5.25 hr.

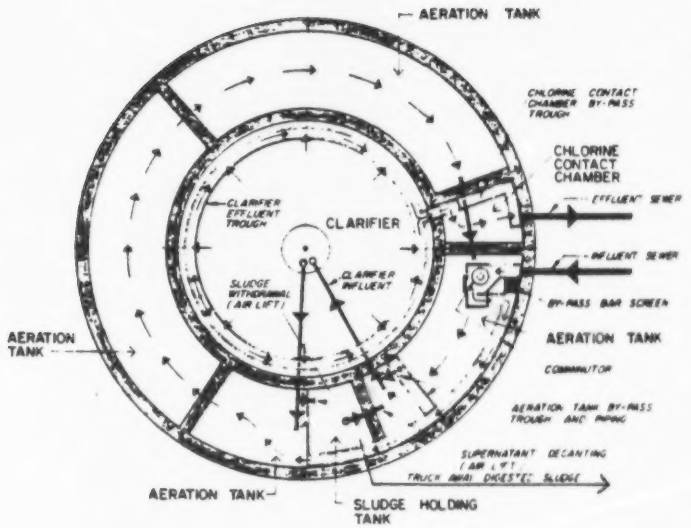
SLUDGE HANDLING

Volume, Digester #1: 150.1m^3
Volume, Digester #2: 76.5m^3
Surface area (Total): 49.5m^2
Loading: .09m^2/capita
Air Supply: 167.5 l/s

CHLORINATION

Chlorination Contact Chamber

Volume: 23.6m^3
Detention: 30 min.



EXTENDED AERATION

DESIGN DATA - IMPERIAL

PROJECT Municipality of Schreiber

PROJECT NO. 1-0072-67
TREATMENT

BOD Raw Sewage 450 mg/l
SS Raw Sewage 240 mg/l

PRETREATMENT

Grit Channels

Twin

SECONDARY TREATMENT

Aeration Tanks

Contact Volumes: 3333 ft^3 = 20,900 gal.
Reaeration Volume: 7792 ft^3 = 58,600 gal.
Loading: 40 lb. BOD/1000 ft^3
Contact Retention: 2 hrs.
Reaeration Retention: 4.67 hr.
Total Area: 741 ft^2

Air Supply

Total: 1000 cfm
No. of blowers: 2
Each blower provides 930 cfm @ 845 r.p.m.
using a 50 hp. motor

Secondary Sedimentation

Area: 727 ft^2
Volume: 8760 ft^3 = 54,600 gal.
Loading: surface, 344 gal./ft^2/day
Retention: 5.25 hr.

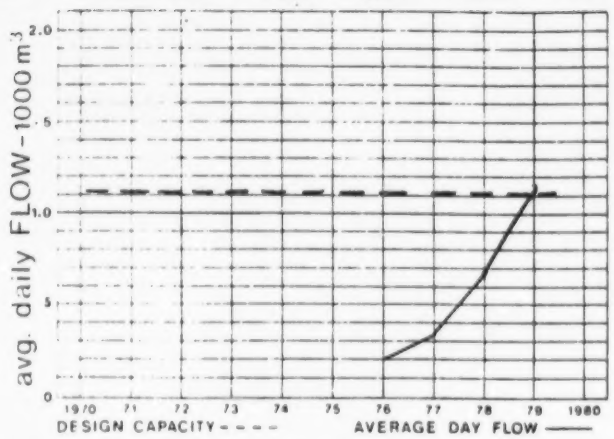
SLUDGE HANDLING

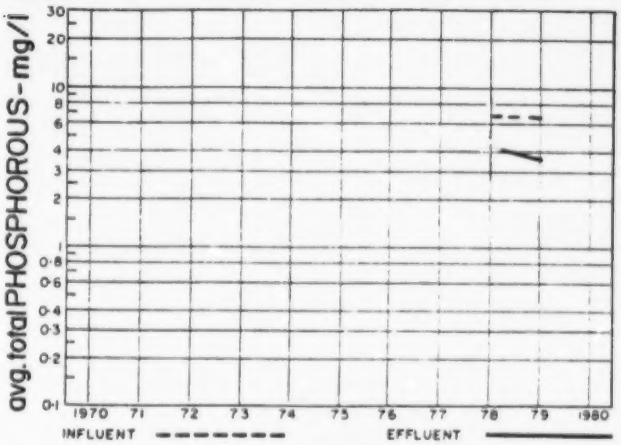
Volume, Digester #1: 5300 ft^3
Volume, Digester #2: 2700 ft^3
Surface area: Total: 533 ft^2
Loading: 1.2 ft^3/capita
Air Supply: 400 cfm

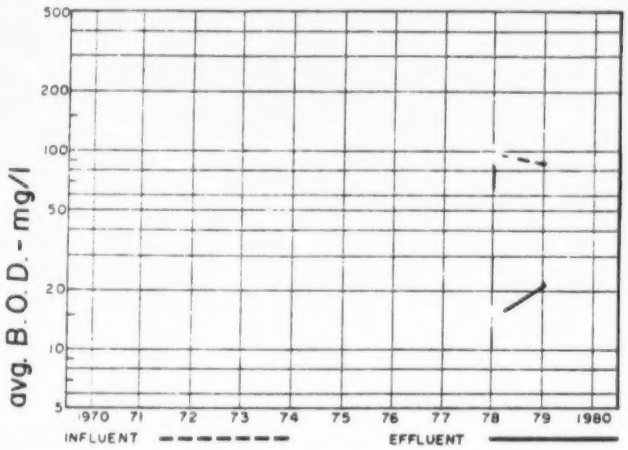
CHLORINATION

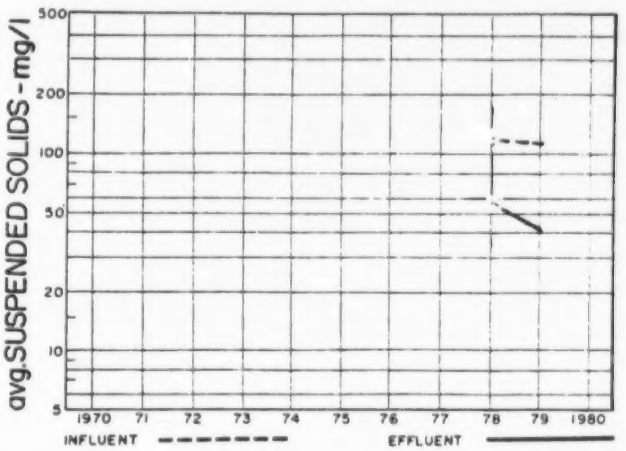
Chlorination Contact Chamber

Volume: 5200 gal.
Detention: 30 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110002112 SCHREIBER W P C P

MUNICIPALITY SCHREIBER
REGION 06 NORTHWESTERN

TREATMENT FACILITY EXT AERATION/CONT STABLIZATION

* DATA NOT AVAILABLE

CURRENT POPULATION	1,986
POPULATION SERVED	2,000
PERCENT SERVED	100 7

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.138 1000 M3 DESIGN BOD5 : 450.0 MG/L DESIGN SUSP.SOLIDS : 240.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	32.053	1.033	1.300		130.0	16.0	87	3.6	*	40.0			5.2	2.6	50	083
FEB	42.514	1.518	2.441		60.0	18.0	70	1.7	*	45.0			2.9	1.5	48	060
MAR	62.730	2.023	2.591		24.0	11.0	54	.8	*	35.0			2.2	1.2	45	063
APR	51.351	1.711	2.254		50.0	12.0	76	1.9	*	40.0			5.8	3.2	44	134
MAY	40.973	1.321	3.709		120.0	90.0	25	1.2	*	20.0			10.0	3.8	62	254
JUN	27.580	919	1.541		140.0	12.0	91	3.5	*	*			10.0	4.6	54	149
JUL	26.012	839	1.313		84.0	26.0	69	1.5	*	*			5.8	6.7	-	
AUG	25.062	808	1.104		85.0	12.0	85	1.8	*	*			5.5	5.0	9	.013
SEP	25.998	.866	1.395		120.0	6.5	94	2.9	*	*			7.4	5.1	31	060
OCT	27.766	895	1.359		80.0	19.0	76	1.6	*	45.0			7.8	4.5	42	092
NOV	31.658	1.055	1.591		*	*			*	*			*	*		
DEC	28.244	911	1.627		75.0	34.0	54	1.1	*	*			6.7	5.1	23	.045
TOTAL	421.941							22.1								953
AVERAGE		1.158			88.0	23.3	73			37.5			6.3	3.9	37	
MAXIMUM			3.709													
NO. OF SAMPLES					11	10				5			11	10		

HIGH RATE TREATMENT PLANTS

Ministry of the Environment

Southwestern Region

①

REGIONAL OFFICE

LONDON
985 Adelaide St. S
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Southwestern Region

(1)

Ontario Ministry of the Environment

DESIGN DATA - METRIC

MEAFORD

PROJECT: Town of Meaford WPCP

PROJECT NO: 1-0003-66

TREATMENT: High Rate Activated Sludge

DESIGN FLOW: 3.910 $10^3 m^3/d$

BOD - Raw Sewage 400 mg/l
SS - Raw Sewage 200 mg/l

COMMINUTOR

Type: Condux type 400
Max. Capacity 11.729 $10^3 m^3/d$

AERATION TANKS

2 tanks, each 9.14m dia x 5.87m swd
Capacity: 772.820 m^3 total
Detention: 4.7 hours

Aerators

Type: 2 mechanical Ames-Crosta driven by 37.3 kw electric motors

SECONDARY CLARIFIER

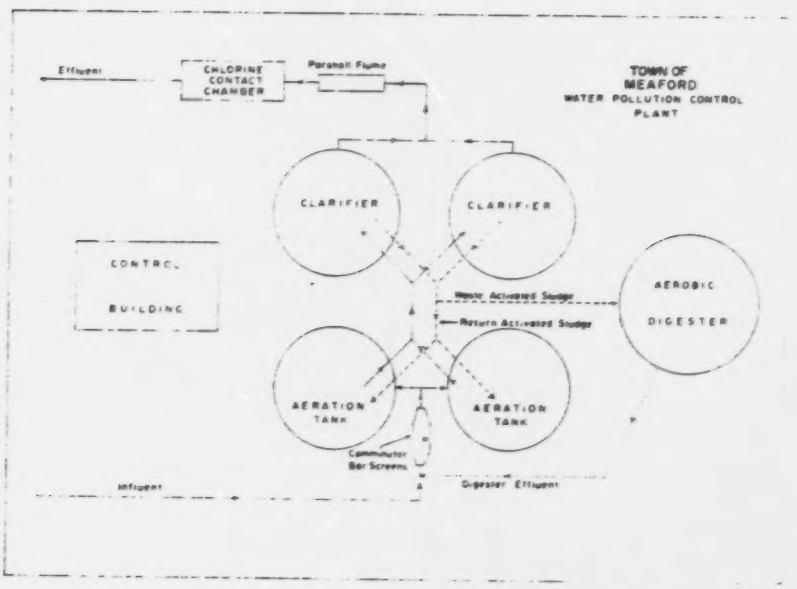
2 clarifiers 12.19 m dia x 3.28 avg. swd
Capacity 763.73 m^3 total
Detention: 4.7 hours
Loading: Surface 16.622 $m^3/m^2 d$
Return Sludge Pumps: 205.904 l/s
@ 9.14 m TDH

CHLORINE CONTACT CHAMBER

Size 7.32 m x 2.44 m x 6.5 m, 38.186m^3
Detention time 14 min.

AEROBIC DIGESTER

Dimensions: 15.24m dia x 5.64m avg swd
Capacity: 103.194 m^3
Aerator: Ames-Crosta mechanical



DESIGN DATA - IMPERIAL

PROJECT Town of Meaford WPCP

PROJECT NO. 1-0003-66

TREATMENT High Rate Activated Sludge

DESIGN FLOW 0.86 mgd

BOD - RAW SEWAGE 400 mg/l

SS - RAW SEWAGE 200 mg/l

COMMINUTOR

Type: Condux type 400
Max. Capacity - 2.58 mgd

AERATION TANKS

2 tanks, each 30'0" dia x 19'3" swd
Capacity: 170,000 I.G. total
Detention: 4.7 hours

Aerators

Type: 2 mechanical Ames-Crosta driven by 50 hp electric motors

SECONDARY CLARIFIER

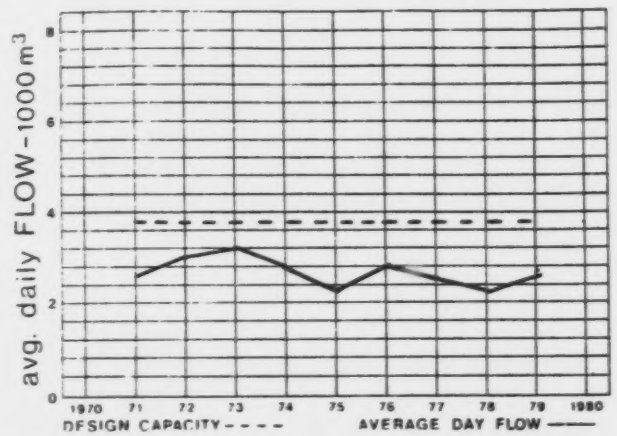
2 clarifiers 40'0" dia x 10'7" avg. swd
Capacity: 168,000 I.G. total
Detention: 4.7 hours
Loading: Surface 540 gal ft²/day
Return Sludge Pumps: 2, 720 IGPM @ 30' T.D.H.

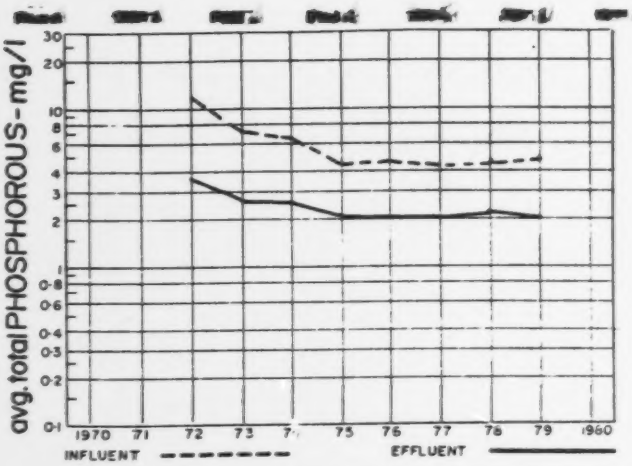
CHLORINE CONTACT CHAMBER

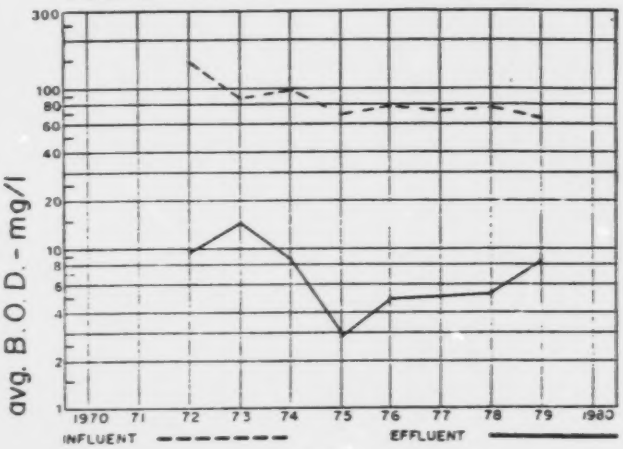
Size: 24' x 8' x 6' 6", 3400 gallons
Detention Time: 14 min.

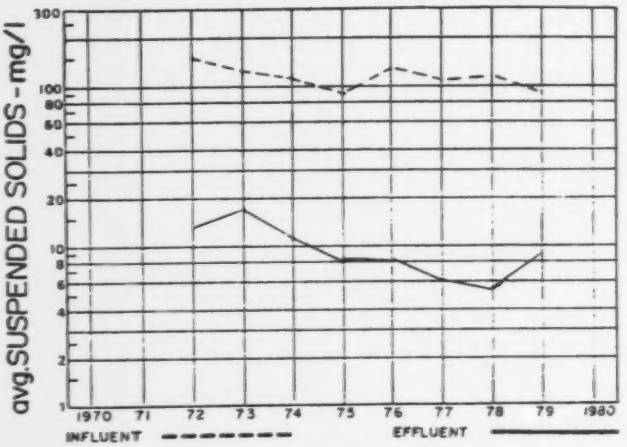
AEROBIC DIGESTER

Dimensions: 50'0" dia x 18'6" avg swd
Capacity: 227,000 I.G.
Aerator: Ames-Crosta mechanical









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000445 MEAFORD WPCP

MUNICIPALITY : MEAFORD
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY HIGH RATE
EXTENDED AERATION

* DATA NOT AVAILABLE

CURRENT POPULATION 4,091
POPULATION SERVED 3,840
PERCENT SERVED 93.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.909 1000 M3 DESIGN BODS : 400.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	71.827	2.317	3.500	13.638	79.0	12.0	84	4.8	85.0	10.0	88	5.3	5.1	2.0	60	.223
FEB	61.330	2.190	3.496	15.911	81.0	15.1	81	4.0	130.0	17.5	85	6.2	5.4	2.3	57	.190
MAR	122.642	3.956	9.047	15.456	52.0	*			63.0	22.0	65	5.0	3.3	1.6	51	.208
APR	104.611	3.487	6.358	13.638	64.0	8.1	87	5.8	101.0	6.0	94	9.9	4.4	1.6	64	.298
MAY	81.040	2.614	4.028	13.638	58.0	7.5	87	4.0	48.0	4.5	90	3.5	4.1	1.9	54	.183
JUN	68.540	2.218	3.377	13.630	54.0	5.3	90	3.2	84.0	4.7	94	5.2	8.6	2.7	68	.393
JUL	70.816	2.284	2.650	13.630	65.0	5.1	92	4.2	104.0	7.7	92	6.8	5.0	2.6	47	.169
AUG	78.049	2.518	3.823	13.630	67.0	4.2	93	4.9	228.0	6.5	97	17.2	5.2	2.1	59	.241
SEP	66.397	2.213	3.992	13.630	90.0	8.4	92	5.5	94.0	4.5	95	5.9	5.1	2.8	45	.153
OCT	87.150	2.811	4.016	13.630	57.0	14.2	75	3.7	61.0	8.7	85	4.5	3.5	1.6	53	.187
NOV	86.167	2.872	4.247	13.630	71.0	7.5	89	5.4	58.5	4.5	92	4.6	4.4	2.2	47	.182
DEC	103.753	3.347	7.947	13.630	57.0	7.3	87	5.1	40.5	2.5	93	3.9	3.5	1.5	56	.208
TOTAL	1000.322							51.0				78.6				2.615
AVERAGE		2.736			66.2	8.4	87		90.5	8.2	90		4.8	2.0	56	
MAXIMUM			9.047	15.911												
NO. OF SAMPLES					24	23			25	24			25	24		

Ministry of the Environment

West Central Region

(2)

REGIONAL OFFICE

STONEY CREEK
140 Centennial Pkwy. N.
416-561-7410

DISTRICT OFFICES

Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

West Central Region

(2)

Ontario

Ministry of the Environmer

DESIGN DATA - METRIC

CAMBRIDGE (HESPELER)

Project: City of Cambridge (Hespeler) WPCP
Project No.: 1-0033-66
Treatment: High Rate Activated Sludge
Design Flow: 9.319 $10^3 m^3/d$

PRETREATMENT

Raw Sewage Pumps:
One: Crane Deming Size: 25.24 l/s
Three: Crane Deming Size: 18.93 l/s

Comminutor
Type: CORD 168

Air Degritter
Size: 0.6 x 4.3m x 2.4m swd
Volume: 37.28 m^3
Retention: 5.8 min.
Mechanism: CHICAGO PUMP

BIOLOGICAL TREATMENT

Aeration Tanks
Two, 45.7m x 2.2m x 4.1m (avg)
Volume: 831.918 m^3
Retention: 2.1 hours

Clarifiers
Two, 45.7m x 3.7m x 3.7m
Volume: 62.785 m^3
Retention: 2.4 hours
Overflow rate: 26.644 $m^3/m^2 \cdot d$

Aerobic Digesters - Stage 1
Size: Two, 22.7m x 4.5m x 4.1m awl
Volume: 1136.5m^3

Aerobic Digesters - Stage 2
Size: Two, 22.7m x 4.5m x 4.1m awl
Volume: 1136.5m^3

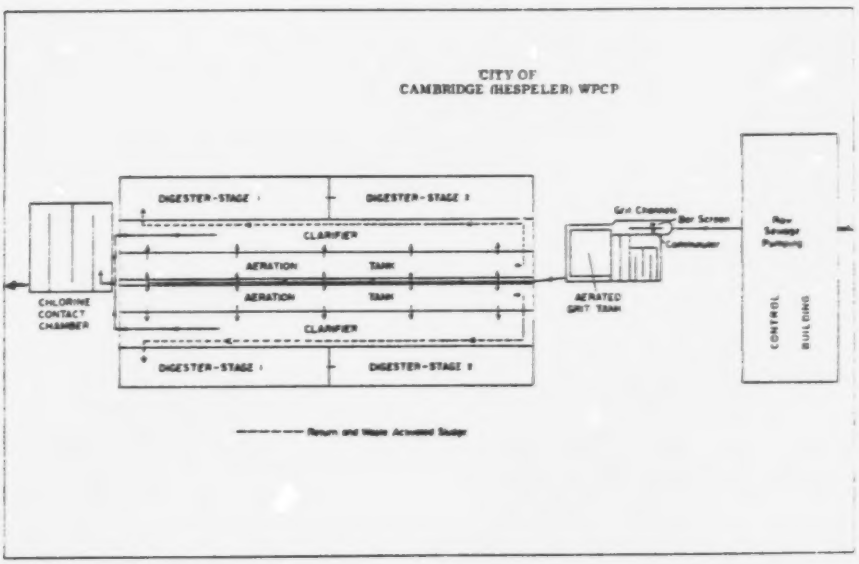
Blowers: Type: Three SUTORBILT 3100
Size: 1484 l/s 111.86 kW motors

Sludge Pump: Type: MEYERS 40 MPD
Size: 5.59 kW

CHLORINATION

Chlorine Contact Chamber
9.1m x 6.5m x 2.5m (4-pass)
Volume: 213.7 m^3
Retention: 33 min.

Chlorinator
Type: W & T A811
Capacity: 226.8 kg/day



DESIGN DATA - IMPERIAL

Project: City of Cambridge (Hespeler) WPCP

Project No: 1-0033-66
Treatment: High Rate Activated Sludge
Design Flow: 2.05 MIGD
BOD: Raw Sewage - 4535 lb/day
SS: Raw Sewage - 4080 lb/day

PRETREATMENT

Raw Sewage Pumps:
One: Crane Deming Size: 400 USGPM
Three: Crane Deming Size: 300 USGPM

Comminutor:
Type: CORD 168

Air Degritter:
Size: 11.75' x 14' x 8' swd
Volume: 8200 I. Gal. Retention: 5.8 min.
Mechanism: CHICAGO PUMP

BIOLOGICAL TREATMENT

Aeration Tanks:
Two, 150' x 7.25' x 13.5' (avg)
Volume: 183,000 I. Gal. Retention: 2.1 Hours

Clarifiers:
Two, 150' x 12.25' x 12.0' awl
Volume: 206,000 I. Gal.
Retention: 2.4 hours
Overflow rate: 545 gpd/sq.ft.

Aerobic Digesters - Stage 1:
Size: Two, 74.5' x 14.75' x 13.5' awl
Volume: 250,000 I. Gal.

Aerobic Digesters - Stage 2:
Size: Two, 74.5' x 14.75' x 13.5' awl
Volume: 250,000 I. Gal.

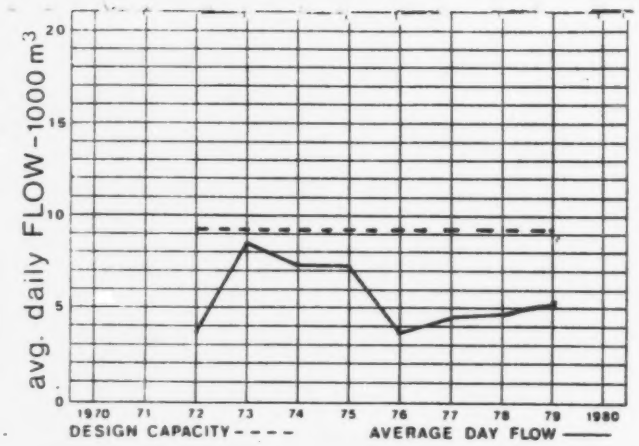
Blowers: Type: Three SUTORBILT 3100
Size: 3550 cfm. 150 HP Motors.

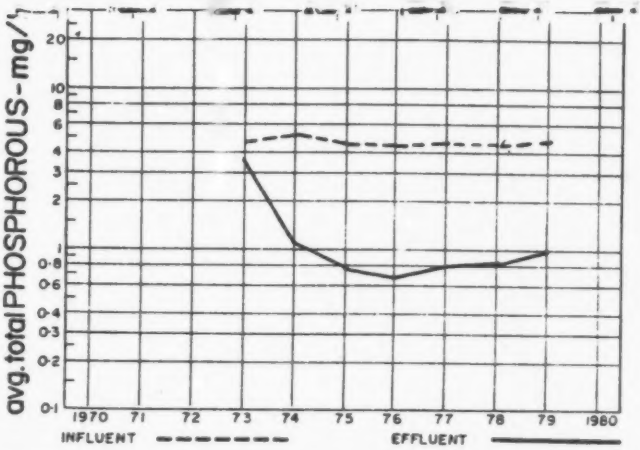
Sludge Pump: Type: MEYERS 40 MPD
Size: 7½ HP

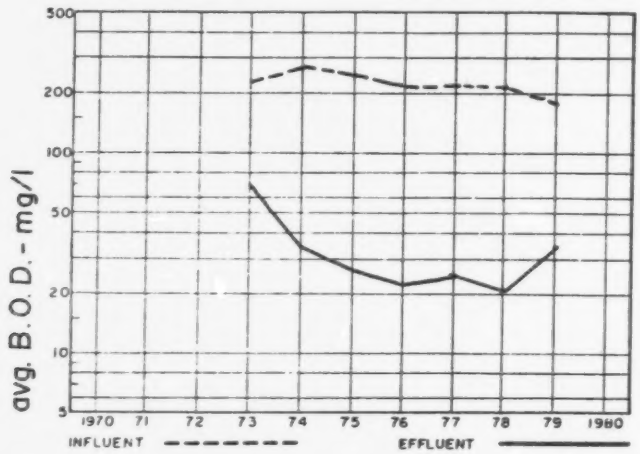
CHLORINATION

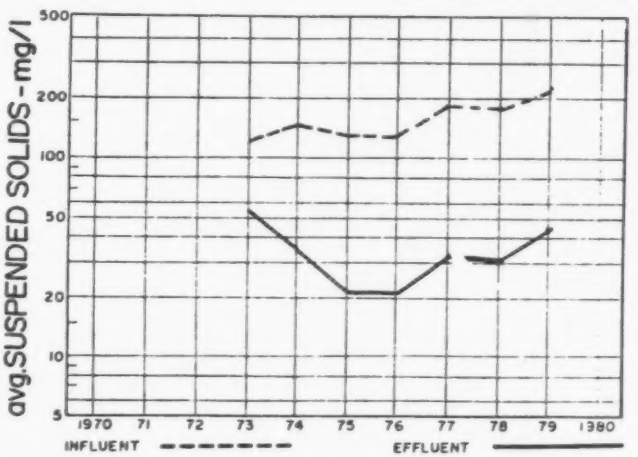
Chlorine Contact Chamber:
30' x 28' x 9' (4-pass)
Volume: 47,000 I. Gal.
Retention: 33 min.

Chlorinator:
Type: W & T A811
Capacity: 500 lb/day









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001033 HESPELER WPCP

MUNICIPALITY CAMBRIDGE (HESPELER)
REGION 02 WEST-CENTRAL

TREATMENT FACILITY HIGH RATE
PHOSPHORUS REMOVAL

CURRENT POPULATION : 73,314
POPULATION SERVED : 9,000
PERCENT SERVED : 12.2

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 9.319 1000 M3 DESIGN BOD5 : 280.0 MG/L DESIGN SUSP.SOLIDS : 215.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	127.834	4.124	5.137	20.457	307.0	25.0	91	36.0	200.0	37.0	81	20.8	5.3	1.0	81	.550
FEB	112.041	4.001	5.537	19.548	241.0	41.0	82	22.4	185.0	59.0	68	14.1	5.4	1.4	74	.448
MAR	159.296	5.139	7.664	17.275	351.0	37.0	89	50.0	465.0	55.0	88	65.3	4.7	.9	80	.606
APR	70.205	5.674	7.274	19.090	211.0	40.0	81	12.0	220.0	50.0	77	11.9	5.0	.8	83	.291
MAY	150.197	4.845	6.028	15.910	202.0	46.0	77	23.4	139.0	51.0	63	13.2	4.3	1.1	74	.481
JUN	141.464	4.715	6.369	16.820	225.0	27.0	88	28.0	426.0	48.0	88	53.4	5.3	1.3	75	.566
JUL	148.800	4.800	6.328	15.000	165.0	27.0	83	20.5	181.0	68.0	57	13.8	4.5	1.3	71	.476
AUG	172.565	5.567	8.124	17.270	125.0	20.0	84	18.1	256.0	28.0	89	39.3	5.5	.7	87	.828
SEP	158.121	5.271	6.278	19.550	181.0	39.0	78	22.4	216.0	33.0	84	28.9	5.2	1.0	80	.664
OCT	189.129	6.101	6.714	15.460	120.0	60.0	50	11.3	170.0	54.0	68	21.9	4.6	1.5	67	.586
NOV	199.514	6.650	8.092	13.640	109.0	25.0	77	16.7	140.0	33.0	76	21.3	3.2	.8	75	.479
DEC	210.157	6.779	9.747	18.640	102.0	28.0	72	15.5	136.0	35.0	74	21.2	4.5	.9	80	.757
TOTAL	1839.323							276.6				325.5				6.731
AVERAGE		5.306			194.9	34.5	82		226.1	45.9	79		4.7	1.0	77	
MAXIMUM			9.747	20.457												
NO. OF SAMPLES					47	79			49	82			49	86		

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386

Central Region ③

Ministry of the Environment
Ontario

DESIGN DATA - METRIC

BRADFORD

Project: Bradford (town) WPCP
Project No.: 1-0035-66
Treatment: High Rate Activated Sludge
Design Flow: 3.637 10^{-3} m^3/d
BOD: Raw Sewage 230 mg/l
SS: Raw Sewage 275 mg/l

PRETREATMENT

COMMINUTION CHAMBER:

Two channels 0.6m W x 2.0m x 2.5m (avg)
with comminutors

BAR SCREEN:

In channel between comminutors

PHOSPHORUS REMOVAL:

AIR DEGRITTER:

Volume: 34.550 m^3
Detention: 13 min
Size: 2.97m x 4.52m x 2.9m (avg)

BIOLOGICAL TREATMENT

AERATION TANKS:

Two, 5.33m x 18.9m x 3.89m swd
Volume: 786.458 m^3
Detention: 4.8 hours

SETTLING TANKS:

Two, 4.27m x 18.92m x 3.89m (avg)
Volume: 481.876 m^3
Detention: 3.0 hour
Overflow rate: 24.2 $m^3/m^2 \cdot d$

AEROBIC DIGESTERS:

Two, 15.2m x 9.6m x 5.3m
Volume: 1591.1 m^3

DIGESTER SETTLING TANKS:

Two, 2.74m x 9.75m x 2.77m
Volume: 113.85 m^3

BLOWERS:

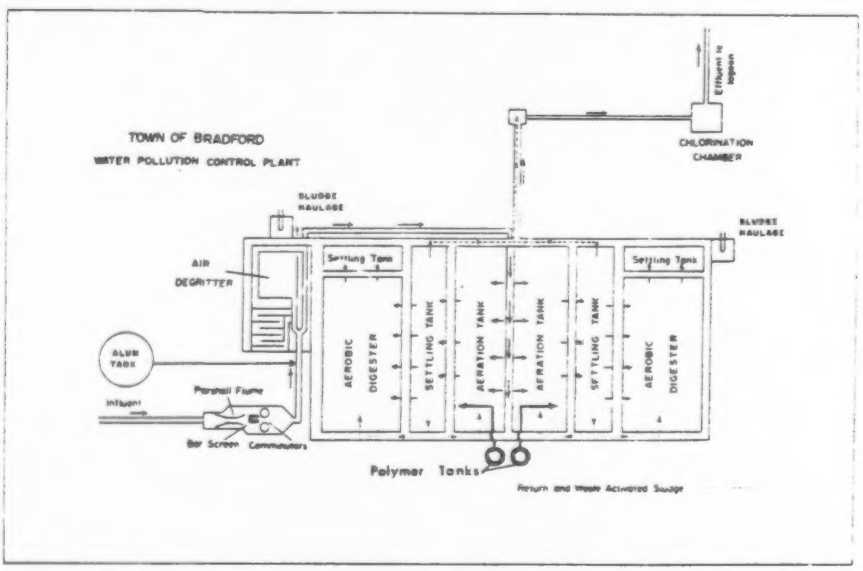
Three, Type: Roots Connersville
Size: 1191.0 l/s @ 58.605 kPa

CHLORINATION:

In effluent Manhole

LAGOON:

4.047 hectares



DESIGN DATA - IMPERIAL

Project:	Bradford (town) WPCP
Project No:	1-0035-66
Treatment:	High Rate Activated Sludge
Design Flow:	0.80 MGD
BOD:	Raw Sewage - 230 mg/l
SS:	Raw Sewage - 275 mg/l

PRETREATMENT

COMMINUTION CHAMBER:
Two channels 1.9'w x 6.5' x 1.5 (avg)
with comminutors

BAR SCREEN:
In channel between comminutors

AIR DEGRITTER:
9.75' x 13' x 9.6' (avg)
Volume: 7,600 l. gal.
Detention: 13 min.

BIOLOGICAL TREATMENT

AERATION TANKS:
Two, 17.5' x 62' x 12.75' swd
Volume: 173,000 l. Gal.
Detention: 4.8 hours

SETTLING TANKS:
Two, 14' x 62' x 12.75' (avg)
Volume: 106,000 l. Gal.
Detention: 3.0 hour
Overflow rate: 495 gpd/sq. ft

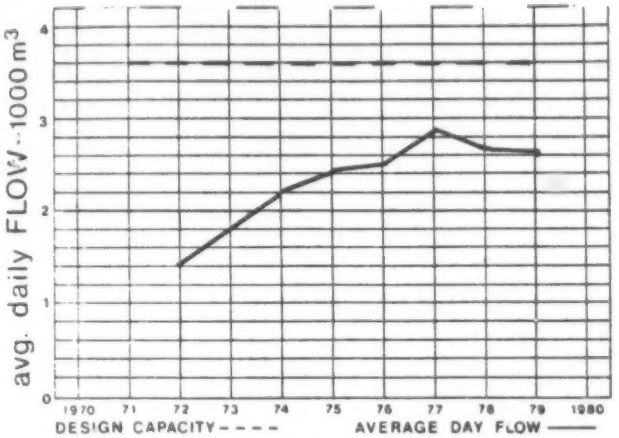
AEROBIC DIGESTERS:
Two, 50' x 32' x 17.5'
Volume: 350,000 l. Gal.

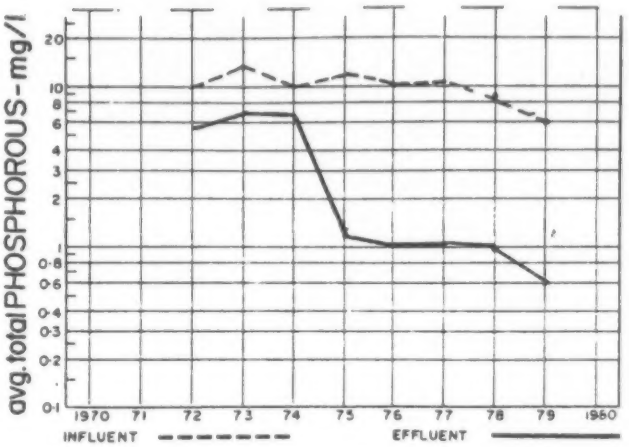
DIGESTER SETTLING TANKS:
Two, 9' x 32' x 9.1'
Volume: 25,000 l. Gal.

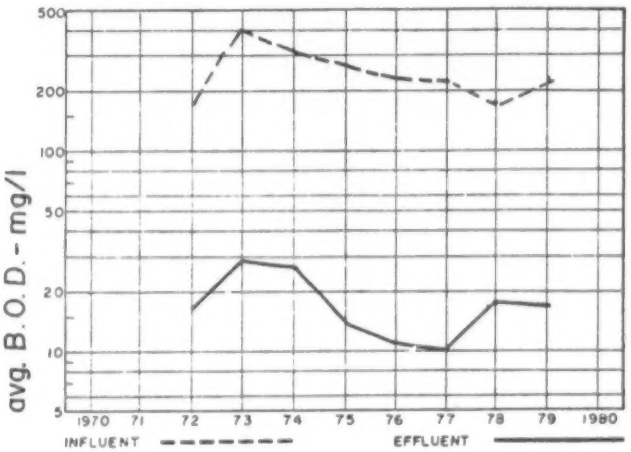
BLOWERS:
Three, Type: Roots Connersville
Size: 2850cfm at 8.5 psi

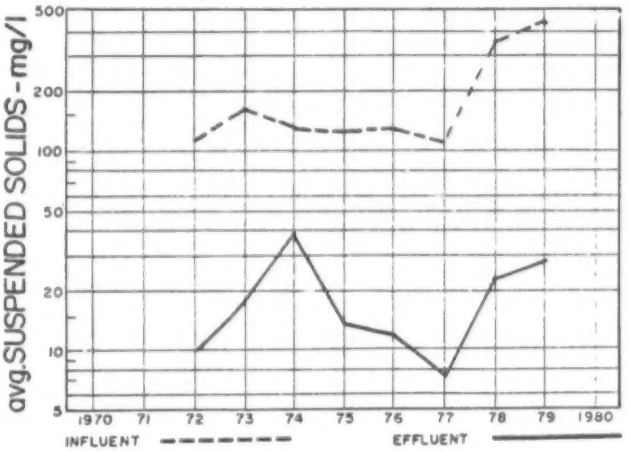
CHLORINATION:
In effluent mannole

LAGOON
16 acres









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110000944 BRADFORD WPCP

MUNICIPALITY : BRADFORD
REGION : 03 CENTRAL

TREATMENT FACILITY HIGH RATE
POLISHING LAGOON(S)
PHOSPHORUS REMOVAL

CURRENT POPULATION : 6,913
POPULATION SERVED : 6,815
PERCENT SERVED : 98.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.636 1000 M3 DESIGN BODS : 230.0 MG/L DESIGN SUSP.SOLIDS : 275.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/79-DEC/79																
JAN	77.227	2.491	3.773	8.819	185.0	20.0	89	12.7	566.0	78.0	86	37.6	11.0	1.5	86	.734
FEB	60.789	2.173	3.737	8.819	440.0	22.0	95	25.4	721.0	44.0	93	41.1	14.0	6	95	.815
MAR	87.265	2.814	5.001	11.092	185.0	26.0	85	13.8	471.0	25.0	94	38.9	6.1	.7	88	.471
APR	91.950	3.065	3.686	9.200	330.0	18.0	94	28.6	344.0	51.0	85	26.9	11.0	.2	98	.993
MAY	88.717	2.862	5.092	9.700	90.0	16.0	82	6.5	460.0	11.0	97	39.8	4.7	.4	90	.378
JUN	65.940	2.198	2.835	6.300	215.0	22.0	89	12.7	393.0	18.0	95	24.7	9.7	.8	91	.587
JUL	68.760	2.218	2.654	6.400	195.0	11.0	94	12.6	293.0	12.0	95	19.3	7.5	.7	89	.462
AUG	65.345	2.108	2.447	8.500	195.0	11.0	94	12.0	421.0	12.0	97	28.7	7.5	.7	89	.439
SEP	69.018	2.301	2.829	6.200	215.0	13.0	93	13.9	351.0	21.0	94	22.7	7.7	.7	90	.482
OCT	91.539	2.953	4.113	7.400	145.0	21.0	85	11.3	380.0	24.0	93	32.5	6.6	.5	91	.551
NOV	89.767	2.992	3.689	11.400	120.0	15.0	87	9.4	502.0	28.0	94	42.5	6.5	.7	89	.521
DEC	94.107	3.036	6.657	9.300	190.0	17.0	91	16.2	327.0	30.0	90	27.9	6.9	.5	92	.602
TOTAL	950.424							175.6				381.1				7.035
AVERAGE		2.601			208.7	17.6	91		435.7	29.5	93		8.2	.6	91	
MAXIMUM			6.657	11.400												
NO. OF SAMPLES					13	12			241	221			11	12		

DESIGN DATA - METRIC

BRADFORD

Project: Bradford (town) WPCP
Project No.: 1-0035-66
Treatment: High Rate Activated Sludge
Design Flow: 3.637 10^{-3} m^3/d
BOD: Raw Sewage 230 mg/l
SS: Raw Sewage 275 mg/l

PRETREATMENT

COMMINUTION CHAMBER:

Two channels 0.6m W x 2.0m x 2.5m (avg)
with comminutors

BAR SCREEN:

In channel between comminutors

PHOSPHORUS REMOVAL

AIR DEGRITTER:

Volume: 34.550 m^3
Detention: 13 min
Size: 2.97m x 4.52m x 2.9m (avg)

BIOLOGICAL TREATMENT

AERATION TANKS:

Two, 5.33m x 18.9m x 3.89m swd
Volume: 786.458 m^3
Detention: 4.8 hours

SETTLING TANKS:

Two, 4.27m x 18.92m x 3.89m (avg)
Volume: 481.876 m^3
Detention: 3.0 hour
Overflow rate: 24.2 $m^3/m^2 \cdot d$

AEROBIC DIGESTERS:

Two, 15.2m x 9.6m x 5.3m
Volume: 1591.1 m^3

DIGESTER SETTLING TANKS:

Two, 2.74m x 2.75m x 2.77m
Volume: 113.85 m^3

BLOWERS:

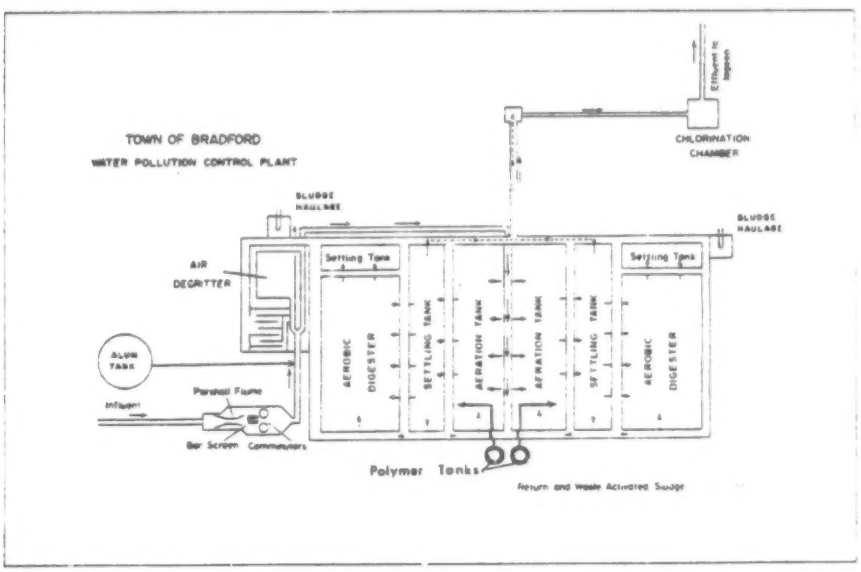
Three, Type: Roots Connersville
Size: 1191.0 l/s @ 58.605 kPa

CHLORINATION:

In effluent Manhole

LAGOON

4.047 hectares



DESIGN DATA - IMPERIAL

Project:	Bradford (town) WPCP
Project No:	1-0035-66
Treatment:	High Rate Activated Sludge
Design Flow:	0.80 MGD
BOD:	Raw Sewage - 230 mg/l
SS:	Raw Sewage - 275 mg/l

PRETREATMENT

COMMINUTION CHAMBER:
Two channels 1.9 w x 6.5' x 1.5 (avg)
with comminutors

BAR SCREEN:
In channel between comminutors

AIR DEGRITTER:
9.75' x 13' x 9.6' (avg)
Volume: 7,600 l. gal.
Detention: 13 min.

BIOLOGICAL TREATMENT

AERATION TANKS:
Two, 17.5' x 62' x 12.75' swd
Volume: 173,000 l. Gal.
Detention: 4.8 hours

SETTLING TANKS:
Two, 14' x 62' x 12.75' (avg)
Volume: 106,000 l. Gal.
Detention: 3.0 hour
Overflow rate: 495 gpd/sq. ft.

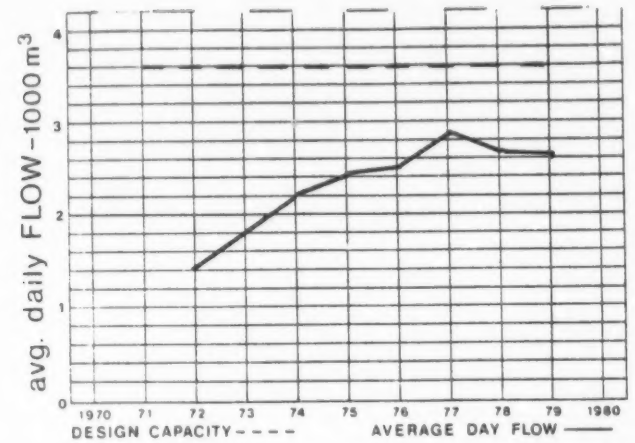
AEROBIC DIGESTERS:
Two, 50' x 32' x 17.5'
Volume: 350,000 l. Gal.

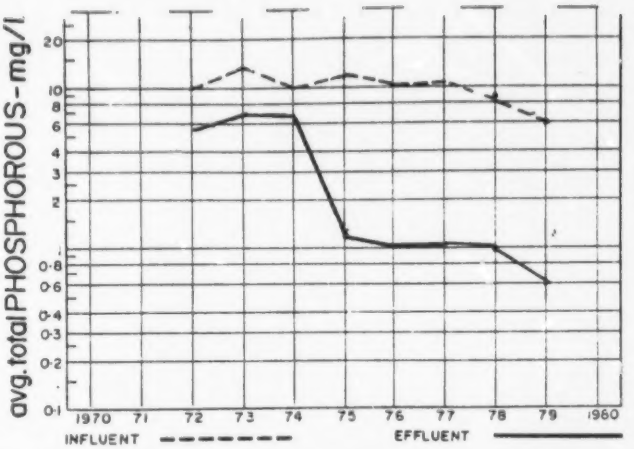
DIGESTER SETTLING TANKS:
Two, 9' x 32' x 9' l.
Volume: 25,000 l. Gal.

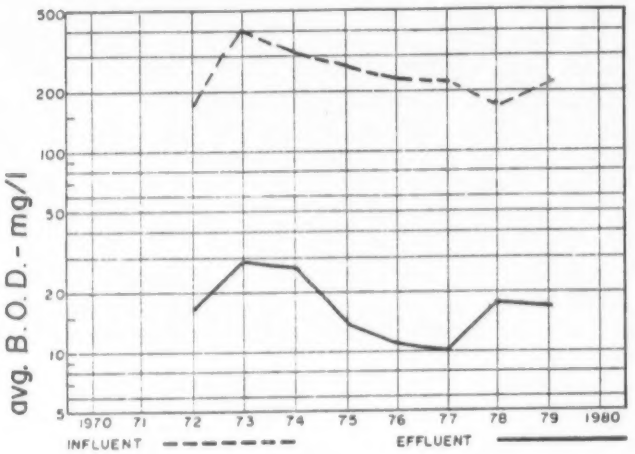
BLOWERS:
Three, Type: Roots Connersville
Size: 2850 cfm a. 8.5 psi

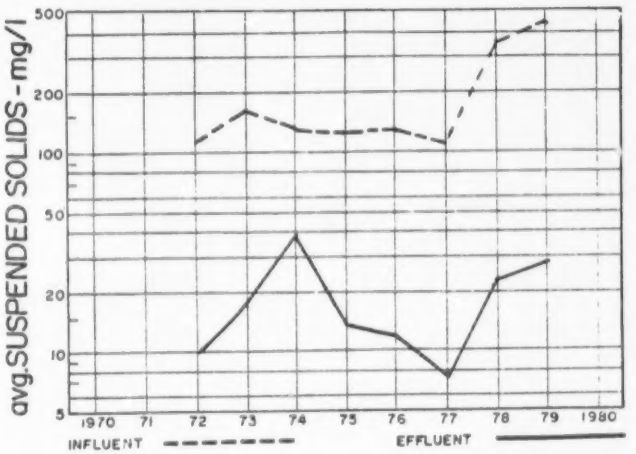
CHLORINATION:
in effluent mannole

LAGOON
10 acres









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000944 BRADFORD WPCP

MUNICIPALITY : BRADFORD
REGION : 03 CENTRAL

TREATMENT FACILITY : HIGH RATE
POLISHING LAGOON(S)
PHOSPHORUS REMOVAL

CURRENT POPULATION : 6,913
POPULATION SERVED : 6,815
PERCENT SERVED : 98.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.638 1000 M3 DESIGN BOD5 : 230.0 MG/L DESIGN SUSP.SOLIDS : 275.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	77.227	2.491	3.773	8.819	185.0	20.0	89	12.7	566.0	78.0	86	37.6	11.0	1.5	86	.734
FEB	60.789	2.173	3.737	8.819	440.0	22.0	95	25.4	721.0	44.0	93	41.1	14.0	.6	95	.815
MAR	87.265	2.814	5.001	11.092	185.0	26.0	85	13.8	471.0	25.0	94	38.9	6.1	.7	88	.471
APR	91.950	3.065	3.686	9.200	330.0	18.0	94	28.6	344.0	51.0	85	26.9	11.0	.2	98	.993
MAY	88.717	2.862	5.092	9.700	90.0	16.0	82	6.5	460.0	11.0	97	39.8	4.7	.4	90	.378
JUN	65.940	2.198	2.835	6.300	215.0	22.0	89	12.7	393.0	18.0	95	24.7	9.7	.8	91	.587
JUL	68.760	2.218	2.654	6.400	195.0	11.0	94	12.6	293.0	12.0	95	19.3	7.5	.7	89	.462
AUG	65.345	2.108	2.447	8.500	195.0	11.0	94	12.0	421.0	12.0	97	28.7	7.5	.7	89	.439
SEP	69.018	2.301	2.829	6.200	215.0	13.0	93	13.9	351.0	21.0	94	22.7	7.7	.7	90	.482
OCT	91.539	2.953	4.113	7.400	145.0	21.0	85	11.3	380.0	24.0	93	32.5	6.6	.5	91	.551
NOV	89.767	2.992	3.689	11.400	120.0	15.0	87	9.4	502.0	28.0	94	42.5	6.5	.7	89	.521
DEC	94.107	3.036	6.657	9.300	190.0	17.0	91	16.2	327.0	30.0	90	27.9	6.9	.5	92	.602
TOTAL	950.424							175.6				381.1				7.035
AVERAGE		2.601			208.7	17.6	91		435.7	29.5	93		8.2	.6	91	
MAXIMUM			6.657	11.400												
NO. OF SAMPLES					13	12			241	221			11	12		

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Southeastern Region

(4)

Ministry of the Environm

Ontario

W2

DESIGN DATA - METRIC

CARLETON PLACE

PROJECT NO: 1-0009-66

TREATMENT: High Rate Activated Sludge

DESIGN FLOW: 5.5 x $10^3 m^3$/d

DESIGN BOD: 108 mg/l

DESIGN SS: 126 mg/l

SEWAGE LIFT PUMPS

Type: Chicago Pump
Cap. Three 79.5 l/s @ 7.0m TDH

PRETREATMENT

1. Coarse Bar Screen, 5.1 cm c-c
2. Barminutor, CP model 15C-12 and bypass screen 2.5 cm c-c
3. Grit Removal - C.P. Aer-Degritter -Size 3.0m x 4.0m x 2.1m avg (25.9m^3)

AERATION SECTION

- Tank Size: two 23.2m x 3.3m x 2.8m (409.1 m^3 gal. total)
- Detention: 1.8 hr @ 5.5 x 10^3 m^3/d
- Air Supply: Three SUTORBILT 518.2 l/s
- Diffusers: C.P. FLEXOFUSERS

SETTLING TANKS

Size: Six 7.0m x 4.9m hopper bottom tanks in two sets of three. (total volume 568.3m^3)
Detention: 2.5 hr @ 5.5 x $10^3 m^3$/d
Loading: 24.4 m^3/m^2.d

CHLORINATION

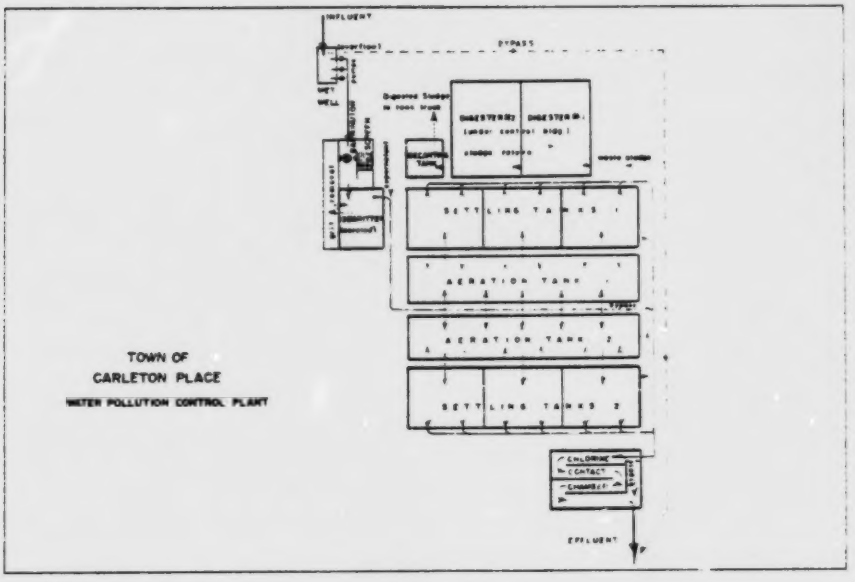
Tank Size: 7.9m x 6.1m x 1.8m (90.9 m^3)
Detention: 24 minutes @ 5.5 x $10^3 m^3$/d
Chlorinator: W&T V-800 90.7 kg/day flow prop.

AEROBIC DIGESTER

Size: Two 8.5m x 10.2m x 3.9m ("27 4m^3 total)

DECANTING TANK

Size: 3.0m x 3.0m hopper bottom (19.5 m^3)



DESIGN DATA - IMPERIAL

PROJECT NO: 1-0009-66
TREATMENT: High Rate Activated Sludge
DESIGN FLOW: 1.2 MGD
DESIGN BOD: 108 mg/l
DESIGN SS: 126 mg/l

SEWAGE LIFT PUMPS

Type: Chicago Pump
Cap. Three 1050 IGPM @ 23' TDH

PRETREATMENT

1. Coarse Bar Screen, 2" c-c
2. Barminutor, CP model 15C-12 and bypass screen 1" c-c
3. Grit Removal - C.P. Aer-Degritter - Size 10' x 13' x 7' avg (5700 gal)

AERATION SECTION

- Tank Size: two 76' x 10'-9" x 9'-1" (90,000 gal. total)
- Detention: 1.8 hr @ 1.2 mgd
- Air Supply: Three SUTORBILT 1240 cfm
- Diffusers: C.P. FLEXOFUSERS

SETTLING TANKS

Size: Six 23' x 16' hopper bottom tanks in two sets of three. Total volume: 125,000 gal.
Detention: 2.5 hr @ 1.2 mgd
Loading: 599 gpd sq. ft.

CHLORINATION

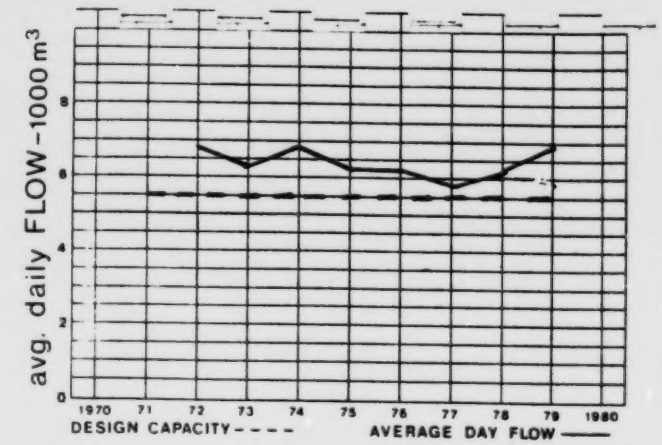
Tank Size: 26' x 20' x 8' (20,000 gal)
Detention: 24 minutes @ 1.2 mgd.
Chlorinator: W & T V-800 200 lb/day, flow prop

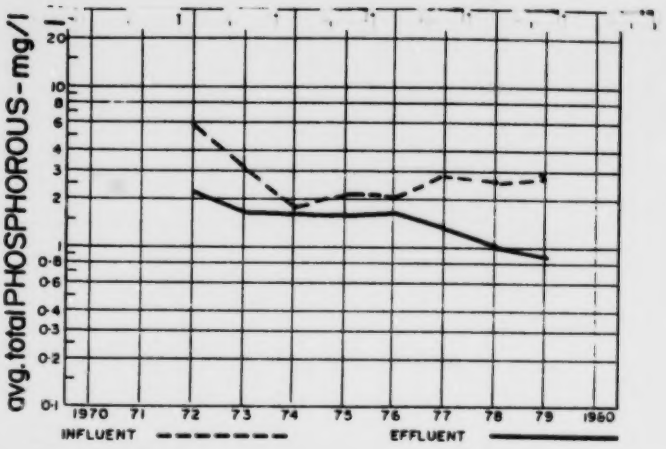
AEROBIC DIGESTER

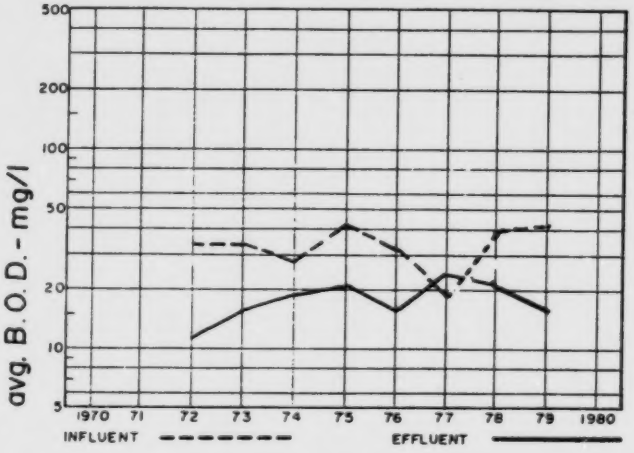
Size: Two 27' x 33'-6" x 12'-8" (160,000 gal total)

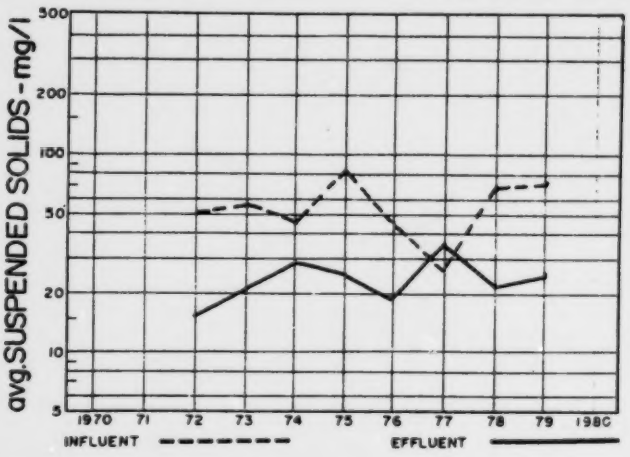
DECANTING TANK

Size: 10' x 10' hopper bottom (4300 gal)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000971 CARLETON PLACE WPCP

MUNICIPALITY : CARLETON PLACE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : HIGH RATE
PHOSPHORUS REMOVAL

CURRENT POPULATION : 5,574
POPULATION SERVED : 5,560
PERCENT SERVED : 99.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.455 1000 M3 DESIGN BOD5 : 108.0 MG/L DESIGN SUSP.SOLIDS : 126.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION				REDUCTION				REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	193.660	6.247	7.274	8.183	53.0	40.0	24	2.5	42.0	30.0	28	2.3	3.0	1.0	66	.387
FEB	198.660	7.095	7.728	7.274	45.0	20.5	54	4.8	50.0	60.0	-	-	3.0	1.0	66	.397
MAR	210.480	6.790	9.092	6.819	57.0	16.0	71	8.6	153.0	32.0	79	25.4	3.0	1.0	66	.421
APR	213.100	7.100	9.500	13.200	38.0	24.0	36	2.9	77.0	30.0	61	10.0	3.0	1.0	66	.426
MAY	244.700	7.890	8.600	12.300	40.0	23.0	42	4.1	66.5	51.5	22	3.6	3.0	1.0	66	.489
JUN	205.000	6.800	8.600	13.200	50.0	10.2	79	8.1	44.0	8.5	80	7.2	3.0	1.0	66	.410
JUL	200.200	6.450	9.100	9.900	23.0	10.5	54	2.5	70.0	10.5	85	11.9	3.0	.9	67	.402
AUG	183.500	5.900	8.600	9.740	45.0	5.4	88	7.2	70.0	14.5	79	10.1	3.0	1.0	66	.367
SEP	170.400	5.680	7.700	9.870	37.0	11.0	70	4.4	67.5	13.5	80	9.2	3.0	1.0	66	.341
OCT	234.300	7.560	9.600	10.180	37.0	8.0	78	6.7	40.0	10.5	73	6.9	3.0	1.0	66	.469
NOV	222.500	7.420	8.000	9.250	34.0	10.5	69	5.2	65.0	26.0	60	8.6	2.9	.9	66	.441
DEC	241.500	7.790	10.600	11.000	24.0	18.0	25	1.4	45.0	30.0	33	3.8	3.0	1.0	66	.483
TOTAL	2518.000							58.9				99.2				5.033
AVERAGE		6.894			40.2	16.4	59		65.8	26.4	59		2.9	.9	66	
MAXIMUM			10.600	13.200												
NO. OF SAMPLES					23	22			23	22			252	252		

Ministry of the Environment
Ontario

Northeastern Region

⑤

REGIONAL OFFICE

SUDBURY
199 Larch St.
705·675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705·476·1001

Sault Ste. Marie
445 Albert St. E.
705·949·4640

Timmins
83 Algonquin Blvd. W.
705·264·9474

Parry Sound
74 Church St.
705·746·2139

Northeastern Region

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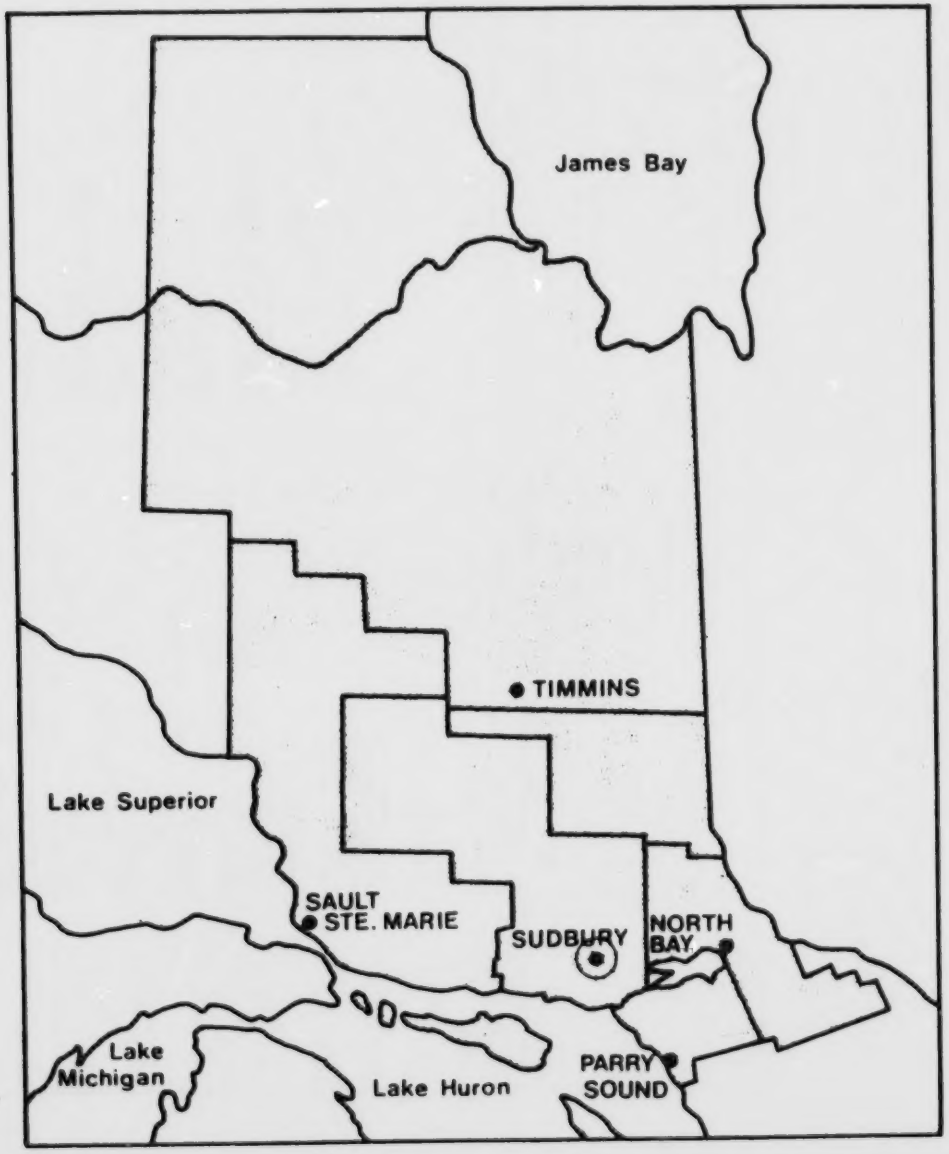
Ministry of the Environment

Ontario



DESIGN DATA - METRIC

Project: Sudbury WPCP Treatment: High Rate
Project No. 2-1002-72
Design Flow: 51,143 $10^3 m^3/d$
Design BOD: 95 mg/l
Design SS: 139 mg/l

RAW SEWAGE PUMPS
(at pumping station)
Three CANADA PUMPS: Type: 14 DSV
Capacity: (each) 567.9 l/s @ 28.35m TDH
Two CANADA PUMPS: Type: 10 RSLV,
Capacity: 277.64 l/s @ 28.80 TDH

BAR SCREENS
Two, LINK-BELT Mechanical Bar Screens
1.22m x 1.83m Bars on 63.5mm Centres

DETRITOR
9.14m dia. x 0.67m swd
Type: DORR-OLIVER LONG

RAW SEWAGE PUMPS
(at plant)
Three, WORTHINGTON
Capacity (each) 848.064 l/s @ 8.53m TDH

AERATION TANKS
Three, 40.39m x 14.63m x 4.57m swd
Volume (total) 8119.156 m^3
Detention: 2.9 hours
Blowers: Four, SPENCER TURBO
Capacity each: 294 m^3/min @ 58.6 kPa

FINAL CLARIFIERS
Four, 33.53m dia. x 3.81m swd
Mechanism: DORR-OLIVER LONG
Volume: (total) 13,638 m^3
Detention: 4.7 hours
Surface overflow rate: 20.337 $m^3/m^2 \cdot d$

SUDBURY

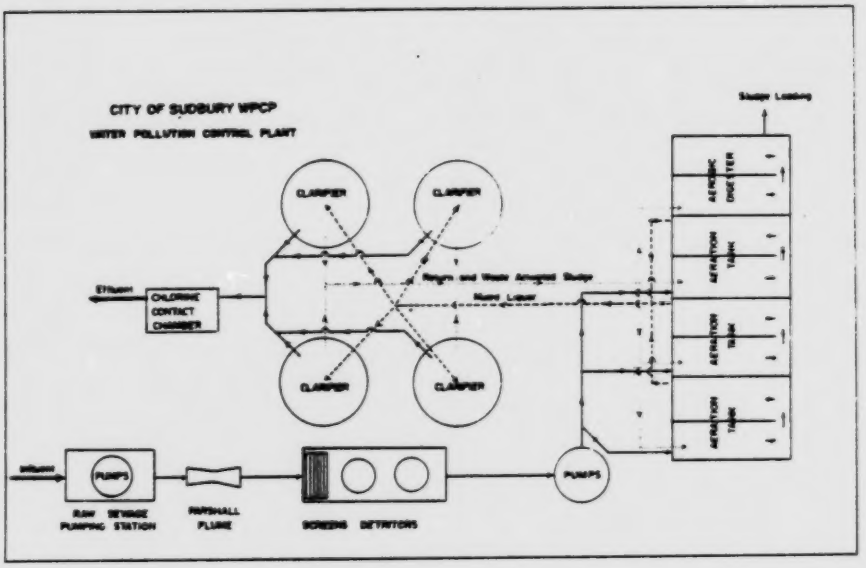
RETURN SLUDGE PUMPS Three WORTHINGTON
Capacity (each): 461.77 l/s @ 15.54m TDH
One WORTHINGTON
Capacity: 63.59 l/s @ 9.75m TDH

AEROBIC DIGESTER
One, 40.38m x 14.63m x 4.57m swd
Volume (total): 2704.87 m^3

CHLORINATORS
One, FISHER AND PORTER
Type: 70-4500
Capacity: 3628.8 kg/day
One, FISHER AND PORTER
Type: 71-V1006
Capacity: 181.44 kg/day

CHLORINE CONTACT CHAMBER
42.37m x 9.14m x 3.81m
Volume: 1477.45 m^3

LAGOONS
Two, .4047 hectares



DESIGN DATA - IMPERIAL

Project Sudbury WPCP
Project No: 2-1002-72
Design Flow: 11.25 MGD
Design BOD [illegible] mg/l
Design SS [illegible] mg/l

RAW SEWAGE PUMPS
(at pumping station)
Three CANADA PUMPS: Type: 14 DSV,
Capacity: (each) 9000 USGPM at 93' TDH
Two CANADA PUMPS: Type: 10RSLV,
Capacity: 4400 USGPM at 94.5 TDH

BAR SCREENS:
Two, LINK-BELT Mechanical Bar Screens
4' x 6' Bars on 2.5" centres

DETRITOR
30' dia. x 2.2' swd
Type: DORR-OLIVER LONG

RAW SEWAGE PUMPS
(at plant)
Three, WORTHINGTON
Capacity (each) 13,440 USGPM at 28' TDH

AERATION TANKS:
Three, 132.5' x 48' x 15' swd (2-pass)
Volume (total) 1,786,000 I. Gal.
Detention: 2.9 hours
Blowers: Four, SPENCER TURBO
Capacity each: 10,400 ft^3/min. at 8.5 psi

FINAL CLARIFIERS
Four, 110' dia. x 12.5' swd
Mechanism: DORR-OLIVER LONG
Volume: (total) 3,000,000 I. Gal.
Detention: 4.7 hours
Surface overflow rate: 418 gal/ft^2/day

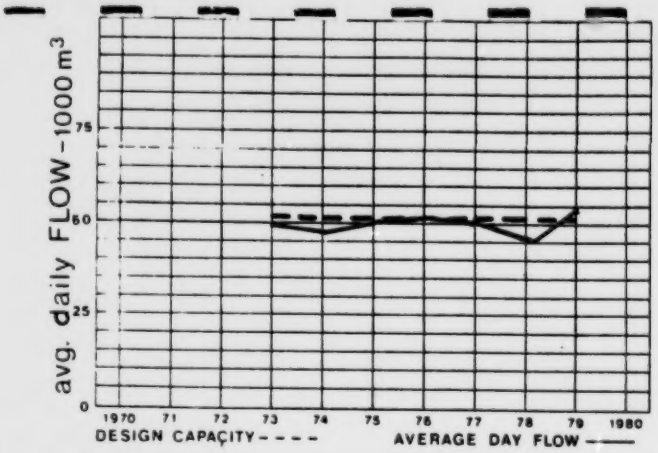
RETURN SLUDGE PUMPS:
Three WORTHINGTON
Capacity (each): 6100 gpm at 51' TDH
One WORTHINGTON
Capacity: 840 gpm at 32' TDH

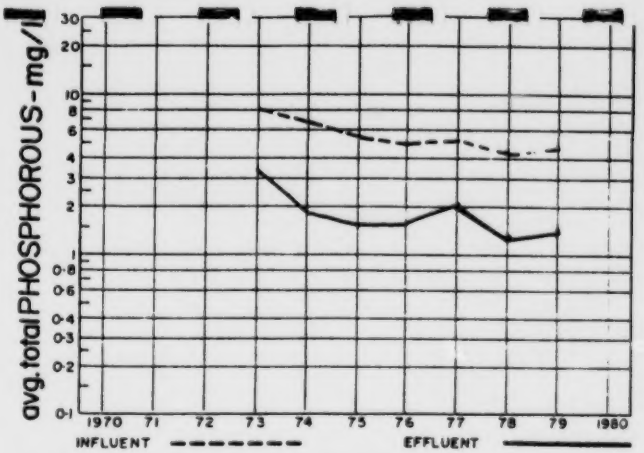
AEROBIC DIGESTER
One, 132.5' x 48' x 15' swd (two-pass)
Volume (total) 595,000 I. Gal.

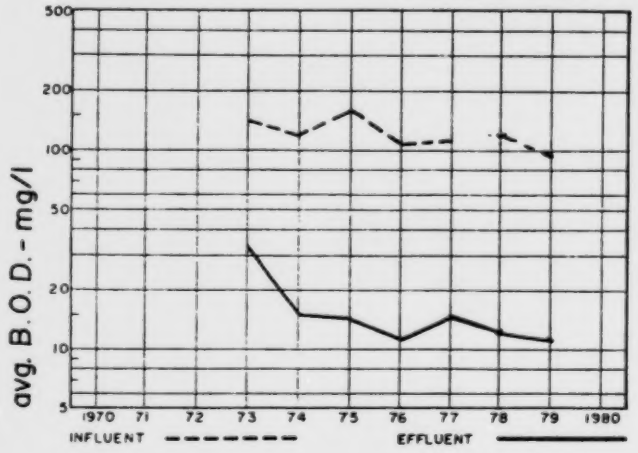
CHLORINATORS:
One, FISHER AND PORTER
Type: 70-4500
Capacity: 8000 lb/day
One, FISHER AND PORTER
Type: 71-V1006
Capacity: 400 lb/day

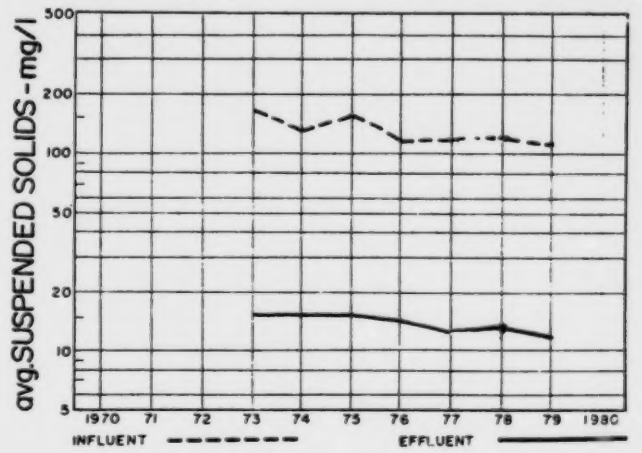
CHLORINE CONTACT CHAMBER:
139' x 30' x 12.5'
Volume: 325,000 I. Gal.

LAGOONS
2, Area: 1 acre









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000711 SUMMARY W P C P OPER TO RUN IN 80

MUNICIPALITY : SUDBURY
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : HIGH RATE

* DATA NOT AVAILABLE

CURRENT POPULATION : 94,206
POPULATION SERVED : 90,300
PERCENT SERVED : 95.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 51.142 1000 M3 DESIGN BODS : 95.0 MG/L DESIGN SUSP.SOLIDS : 139.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION				REDUCTION				REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	1375.942	44.383	47.251	63.644	130.0	22.3	82	148.1	119.0	12.2	89	146.9	4.1	1.4	65	3.715
FEB	1192.243	42.582	47.233	81.828	118.0	12.0	89	126.3	121.0	11.0	90	131.1	6.1	1.4	77	5.604
MAR	2287.206	73.777	100.785	127.288	85.0	18.0	75	112.0	74.0	15.7	78	133.3	*	*		
APR	2494.652	83.155	141.953	159.000	41.0	9.2	77	79.2	62.0	12.6	79	123.2	1.1	.6	38	1.048
MAY	1889.272	60.944	87.460	104.000	77.5	9.2	88	129.0	106.0	11.7	88	178.1	3.8	*		
JUN	1483.156	49.439	57.447	125.000	80.0	7.0	91	108.2	115.0	12.2	89	152.4	5.5	2.4	56	4.598
JUL	1476.371	47.625	53.311	98.000	112.0	10.3	90	150.1	125.0	14.3	88	183.4	3.8	.4	89	5.020
AUG	1422.683	45.893	54.529	145.000	113.0	15.0	86	139.4	162.1	14.6	90	209.8	9.6	4.1	57	7.825
SEP	1378.460	45.949	51.688	95.000	115.0	8.5	92	146.8	131.0	17.8	86	156.0	*	*		
OCT	1514.000	49.000	53.000	68.000	106.0	9.0	91	145.3	165.0	5.0	96	242.2	4.8	.6	88	6.268
NOV	1606.000	55.000	83.000	118.000	*	*			*	*			*	*		
DEC	1655.000	53.000	66.000	109.000	110.0	13.0	88	160.5	130.0	14.0	89	191.9	3.7	3.3	37	2.317
TOTAL	19774.985							1445.4				1828.8				36 395
AVERAGE		54.082			98.9	11.9	87		119.1	12.8	89		4.7	1.6	64	
MAXIMUM			141.953	159.000												
NO. OF SAMPLES					18	19			48	117			9	8		

OXIDATION DITCH TREATMENT PLANTS

Ministry of the Environment
Ontario

Southwestern Region

(1)

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Southwestern Region

(1)

Ontario Ministry of the Environme

DESIGN DATA - METRIC

PAISLEY

PROJECT: Village of Paisley WPCP

PROJECT NO. 1-0101-67

TREATMENT: Extended Aeration

NOMINAL FLOW: 0.705 $10^3m^3/d$

BOD - Raw Sewage 119.8 kg/d

RAW SEWAGE P.S.
Capacity: 0.844 $10^3m^3/d$

COMMINUTOR
Type: Condux SCHQU150-A
Size: 57 R/m

GRIT CHAMBERS
Size: Two, each 6.1m x 0.6m x 0.85m swd
Volume (each): 3.18 m^3
Retention: (each) 6.5 min.

OXIDATION DITCH
Volume: 555.52 m^3
Retention: 18.9 hr.

ROTORS
Type: Pumps and Softeners Ltd.
Size: Two, each 2.43m length x 0.70m dia.

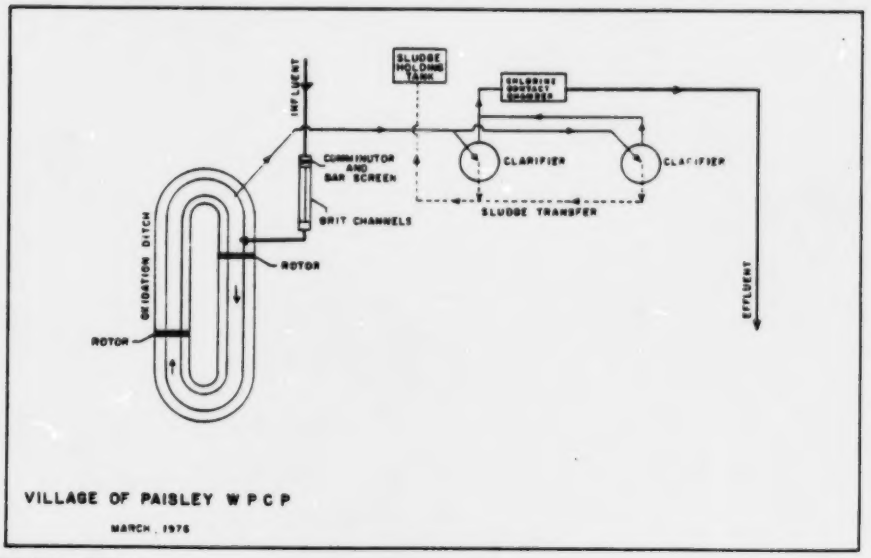
SECONDARY CLARIFIERS
Type: Two, circular
Size: each 7.3m dia x 3.0m swd
Volume (total): 256.85m^3
Retention (total): 6.7 hr.
Loading:
- Surface: 16.62 $m^3/m^2 \cdot d$
- Weir: 15.39 $m3/m \cdot d$

SLUDGE PUMPS
Type: Two, each 10.29 l/s at 6m TDH

CHLORINATION CHAMBER
Volume: 12.93 m^3
Retention: 26 min.

CHLORINATOR
Type: F and P
Capacity: 18.1 kg/d

SLUDGE HOLDING TANK
Size: 5.2m x 3.0m x 3.7m swd
Volume: 50.0m^3



DESIGN DATA - IMPERIAL

PROJECT: Village of Paisley WPCP

PROJECT NO. 1-0101-67

TREATMENT: Oxidation Ditch

NOMINAL FLOW: 0.155 MIGD

BOD - Raw Sewage 264 lb/day

RAW SEWAGE P.S.
Capacity: 0.7 USMGD

COMMINUTOR
Type: Condux SCHQU150-A
Size: 57 rpm

GRIT CHANNELS
Size: Two, each 20'x2'x2.8'swd
Volume (each): 700 I.G.
Retention: (each) 6.5 min.

OXIDATION DITCH
Volume: 122,200 I.G.
Retention: 18.9 hr.

ROTORS
Type: Pumps and Softeners Ltd.
Size: Two, each 8' length x 2.3' dia.

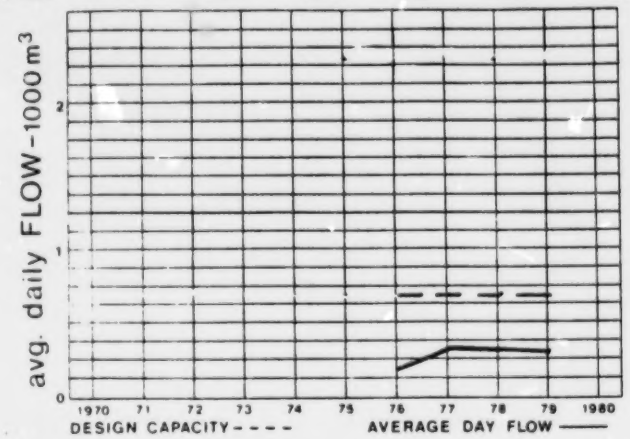
SECONDARY CLARIFIERS
Type: Two, circular
Size: each 24' dia x 10' swd
Volume (total): 56,500 I.G.
Retention (total): 6.7 hr
Loading:
- Surface: 340 IG/ft^2/day
- Weir: 1033 IG/ft/day

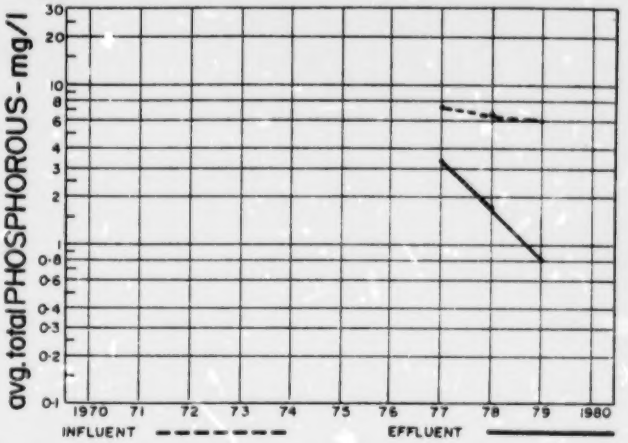
SLUDGE PUMPS
Type: Two, each 163 USGPM @ 15'TDH

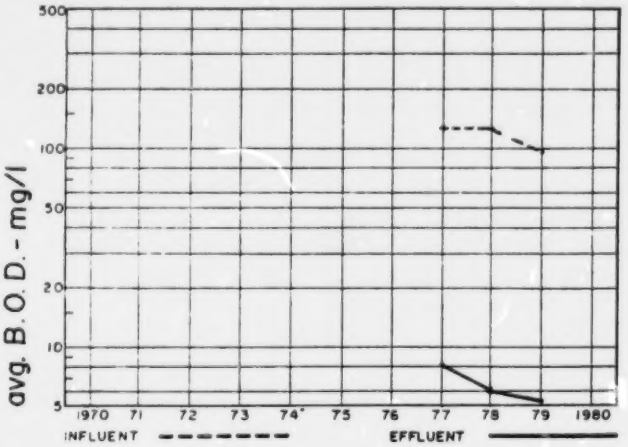
CHLORINATION CHAMBER
Volume: 2845 I.G.
Retention: 26 min.

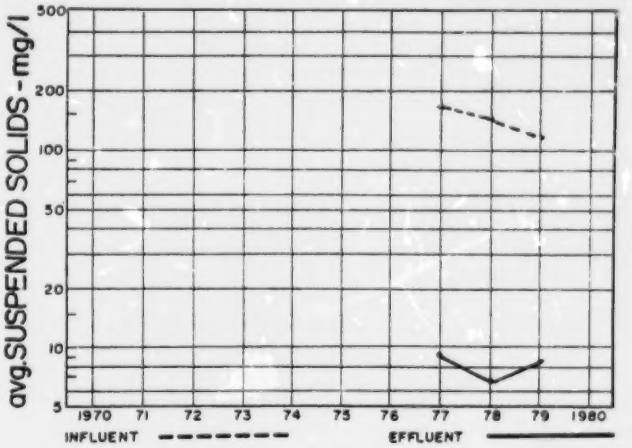
CHLORINATOR
Type: F and P
Capacity: 40 lb/day

SLUDGE HOLDING TANK
Size: 17'x10'x12' swd
Volume: 11,000 I.G.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001907 PAISLEY WPCP

MUNICIPALITY : PAISLEY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY OXIDATION DITCH

CURRENT POPULATION : 1,067
POPULATION SERVED : 637
PERCENT SERVED : 59.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.704 1000 M3 DESIGN BODS : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	10.547	.340	.396		164.0	5.8	96	1.6	216.0	14.5	93	2.1	8.8	.8	90	.084
FEB	10.274	.367	.486		46.0	16.0	65	.3	92.0	30.0	67	.6	4.0	1.0	75	.031
MAR	17.138	.553	1.246		96.0	6.0	93	1.5	172.0	9.5	94	2.7	5.7	.8	85	.084
APR	13.261	.442	.854		82.0	3.7	95	1.0	158.0	8.0	94	1.9	6.0	.7	88	.070
MAY	10.046	.324	.435		101.0	3.2	96	.9	107.5	3.2	96	1.0	7.2	.8	88	.064
JUN	9.107	.304	.368		97.0	1.1	98	.8	100.5	4.0	96	.8	6.9	1.2	81	.051
JUL	7.980	.257	.324		53.0	1.9	96	.4	80.5	2.2	97	.6	4.4	1.4	68	.024
AUG	9.266	.299	.392		48.0	1.2	97	.4	98.0	7.5	92	.8	6.5	1.3	78	.048
SEP	8.363	.279	.338		96.0	3.7	96	.7	121.0	4.5	96	.9	5.5	.7	88	.040
OCT	10.353	.334	.468		114.0	5.9	94	1.1	85.0	3.5	95	.8	5.4	.3	94	.053
NOV	10.937	.365	.592		102.0	4.0	96	1.0	143.5	5.5	96	1.5	6.5	.5	91	.065
DEC	14.768	.476	.841		144.0	10.4	92	1.9	105.0	8.5	91	1.4	5.3	.6	87	.069
TOTAL	132.040							12.1				15.6				683
AVERAGE		.362			95.2	5.2	94		123.2	8.4	93		6.0	.8	85	
MAXIMUM			1.246													
NO. OF SAMPLES					22	22			22	22			22	22		

962

DESIGN DATA - METRIC

SOUTHAMPTON

PROJECT: Town of Southampton WPCP
PROJECT NO.: 1-0027-66
TREATMENT: Oxidation Ditch
DESIGN CAPACITIES: Winter - 1.318 $10^3 m^3/d$
Summer - 3.05 $10^3 m^3/d$

DESIGN POPULATION: Summer - 6700
Winter - 2900

BOD - RAW SEWAGE: Winter - 223.6 kg/d
Summer - 430.9 kg/d

PUMPING STATIONS

P.S. NO. 1
PUMPS
Type: variable-speed
Size: two each 115.2 l/s @ 32.9m TDH

SCREENING
Type: Bar screen (manually cleaned)
Gravity overflow

P.S. NO. 2
PUMPS
Type: FLYGT Submersible
Size: Two, each 47.3 l/s @ 11.2m TDH

P.S. NO. 3
PUMPS
Type: FLYGT Submersible
Size: Two, each 15.8 l/s @ 22.3m TDH

PRETREATMENT

SCREENING
Bar Screen (manually cleaned)

COMMINUTION
Size: 40.6 cm dia.
Motor 2.24 kW

BIOLOGICAL TREATMENT

OXIDATION DITCHES
Two, Volume (each) 1318.34m^3
Retentions: Winter (1 ditch): 24 hr.
Summer (2 ditches): 20.8 hr

AERATORS (1 per ditch)
Size: two, each 0.7m dia. x 6.1m l
Motors: 1.86 kW

FINAL SEDIMENTATION TANKS
Size: Two, each 4.3m x 14.6m x 3.7m awl
Volume (total): 454.6 m^3
Retentions: Winter (1 tank): 4.2 hr.
Summer (2 tanks): 3.6 hr.
Loadings: surface-winter (1 tank):
21.02 $m^3/m^2 \cdot d$
Summer - (2 tanks)
24.4 $m^3/m^2 \cdot d$
Weir: Winter (1 tank)
59.6 $m^3/m \cdot d$
Summer (2 tanks)
68.8 $m^3/m \cdot d$

RETURN ACTIVATED SLUDGE PUMPS
Type: Centrifugal
Size: Two, each 34.71 l/s @ 7.6m TDH

CHLORINATION

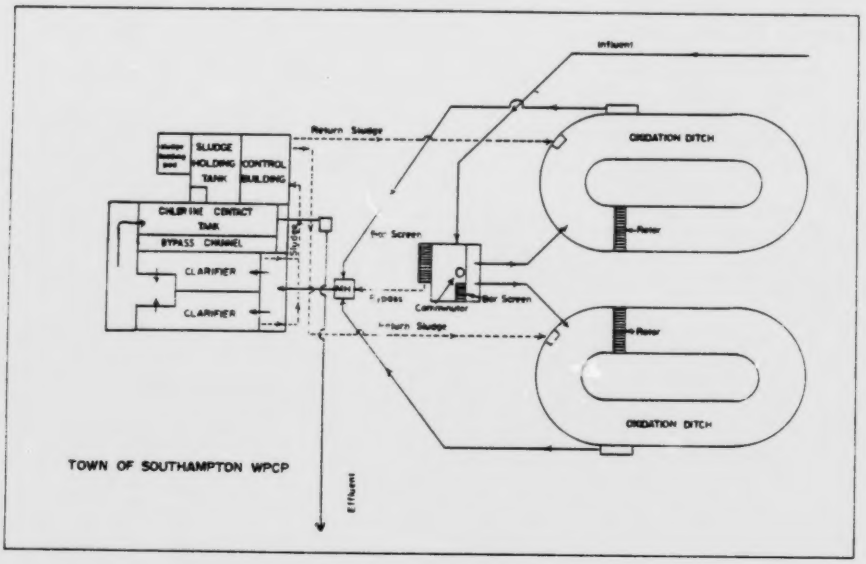
CHLORINE CONTACT CHAMBER
Size: One, 1.8m x 14.6m x 2.7m awl
Volume: 73.65m^3
Retentions: Winter(@ 1.32 $10^3 m^3/d$) 80 mi.
Summer(@ 3.05 $10^3 m^3/d$) 35 mi.

SLUDGE HANDLING

SLUDGE HOLDING TANK
Size: One, 6.4m x 9.1m x 3.4m awl
Volume: 189.7m^3
Loading: winter - .065m^3/cap
summer - .028m^3/cap

SLUDGE PUMP
Type: Duplex plunger
Size: One, 12.62 l/s @ 12.2m TDH

SLUDGE AERATION
Size: One, 112.8 l/s @ 48.2 kPa
Motor: 7.5kW 1150 rpm



DESIGN DATA - IMPERIAL

PROJECT: Town of Southampton WPCP
PROJECT NO: 1-0027-66
TREATMENT: Oxidation Ditch
DESIGN CAPACITIES: Winter - 0.29 MIGD
Summer - 0.67 MIGD

DESIGN POPULATION: Summer- 6700
Winter- 2900

BOD - RAW SEWAGE: Winter-493 lb/day
Summer-950 lb/day

PUMPING STATIONS

P.S. NO. 1
PUMPS
Type: variable-speed
Size: two each 1825 USGPM @ 108' TDH

SCREENING
Type: Bar screen (manually cleaned)
Gravity overflow

P.S. NO. 2
PUMPS
Type: FLYGT Submersible
Size: Two, each 750 USGPM @ 37' TDH

P.S. NO. 3
PUMPS
Type: FLYGT Submersible
Size: Two, each 250 USGPM @ 73' TDH

PRETREATMENT

SCREENING
Bar Screen (manually cleaned)

COMMINUTION
Size: 16" dia
Motor: 3 HP

BIOLOGICAL TREATMENT

OXIDATION DITCHES
Two, Volume (each) 290,000 I.G.
Retentions: Winter (1 ditch): 24 hr
Summer (2 ditches): 20.8 hr

AERATORS (1 per ditch)
Size: two, each 27.5" dia x 20' l
Motors: 25 HP

FINAL SEDIMENTATION TANKS
Size: Two, each 14' x 48' x 12' awl
Volume(total): 100,000 I.G.
Retentions: Winter (1 tank): 4.2 hr
Summer (2 tanks): 3.6 hr
Loadings: surface-Winter (1 tank):
430 IGPD/ft^2
Summer-(2 tanks) 500 IGPD/ft^2

Weir:-Winter (1 tank)
4,000 IGPD/lin ft
Summer (2 tanks)
4620 IGPD/lin ft

RETURN ACTIVATED SLUDGE PUMPS
Type: Centrifugal
Size: Two, each 550 USGPM @ 25' TDH

CHLORINATION

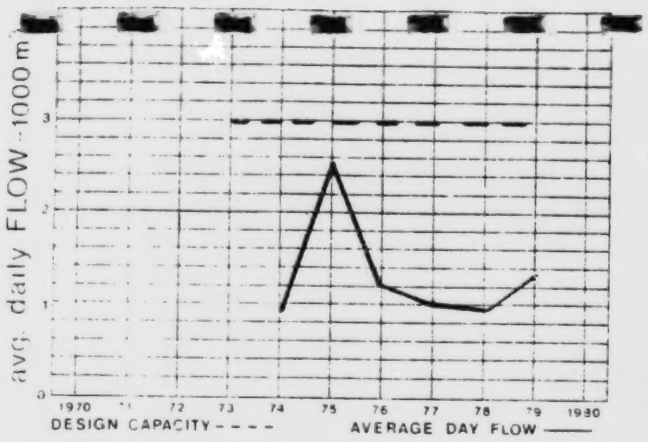
CHLORINE CONTACT CHAMBER
Size: One, 6' x 48' x 9' awl
Volume: 16,200 I.G.
Retentions: Winter(@ 0.29 MIGD) 80 min
Summer(@ 0.67 MIGD) 35 min

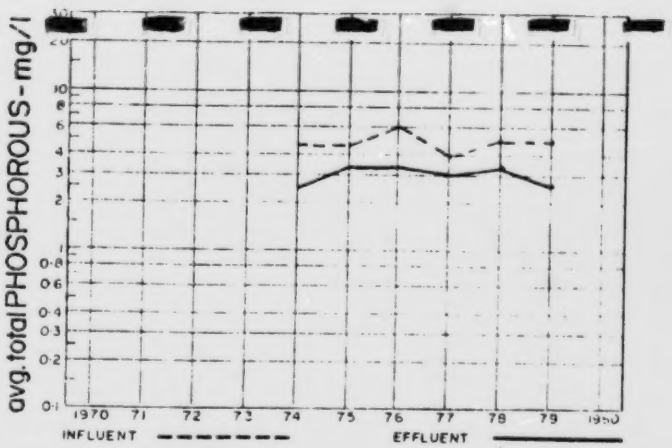
SLUDGE HANDLING

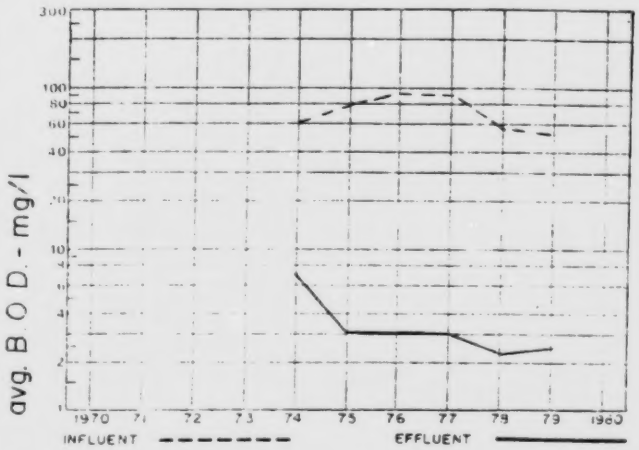
SLUDGE HOLDING TANK
Size: One, 21' x 30' x 13' awl
Volume: 6,700 ft^3
Loading: winter-2.31 ft^3/ cap.
summer-1.00 ft^3/cap.

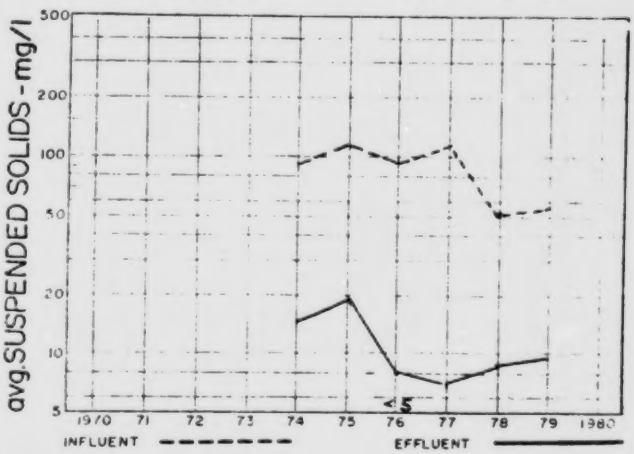
SLUDGE PUMP
Type: Duplex plunger
Size: One, 200 USGPM @ 40' TDH

SLUDGE AERATION
Size: One, 270 cfm @ 7.0 PSIG
Motor: 10 HP, 1150 rpm









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001453 SOUTHAMPTON WPCP

MUNICIPALITY : SOUTHAMPTON
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY OXIDATION DITCH

* DATA NOT AVAILABLE

CURRENT POPULATION : 2,748
POPULATION SERVED : 1,805
PERCENT SERVED : 65.6

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3 045 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	30 231	975	1 187	3 000	72 0	3 4	95	2 0	71.0	13 2	81	1.7	3 3	2 3	30	030
FEB	26 990	964	1 318	5 182	111.0	5 4	95	2.8	87.0	14.0	83	1.9	6.6	2 9	56	100
MAR	55 307	1 784	2 882	4 819	44 0	4 0	90	2.2	45.0	9 9	78	1.9	2.7	*		
APR	48 719	1 624	2 368	6.360	41 0	2 9	92	1.8	29 7	10.4	64	9	2 3	1.2	45	053
MAY	36 804	1 187	1.551	4 700	59 0	1 3	97	2 1	60.0	7.9	86	1.9	4.6	2.6	42	.072
JUN	31 036	1 035	1 272	3 640	96 0	1.4	98	2.9	68 0	7 1	89	1.8	6 3	3 5	44	.087
JUL	42 269	1 364	1.585	4 000	85 0	3 4	96	3 4	59.0	8.1	86	2.1	5.7	3.8	32	.079
AUG	45 637	1 472	1.665	3 600	69 0	2.5	96	3 0	30.4	7.3	75	1 0	5.3	4 0	23	.057
SEP	34 865	1 162	1 594	5 100	60 0	1.5	97	2.0	62.0	9 7	84	1.8	5.3	3.7	30	.056
OCT	40 117	1 294	1 762	3.700	61.0	3.0	95	2 3	53.0	10.0	81	1.7	3.5	2 6	27	039
NOV	41 003	1 433	1 870	3.900	47.0	2.2	95	1.9	51.0	9.8	80	1.7	2.7	2.2	18	.022
DEC	52 267	1 686	2.064	3 600	70 0	2.1	97	3 5	57 0	7 5	86	2.5	4.9	1 8	62	161
TOTAL	487 245							30 3				21 5				.756
AVERAGE		1 332			67 9	2 7	95		56 0	9 5	82		4 4	2 8	36	
MAXIMUM			2 882	6 360												
NO OF SAMPLES					26	27			75	68			26	23		

Ministry of the Environment
Ontario

West Central Region

②

REGIONAL OFFICE

STONEY CREEK
140 Centennial Pkwy. N.
416-561-7410

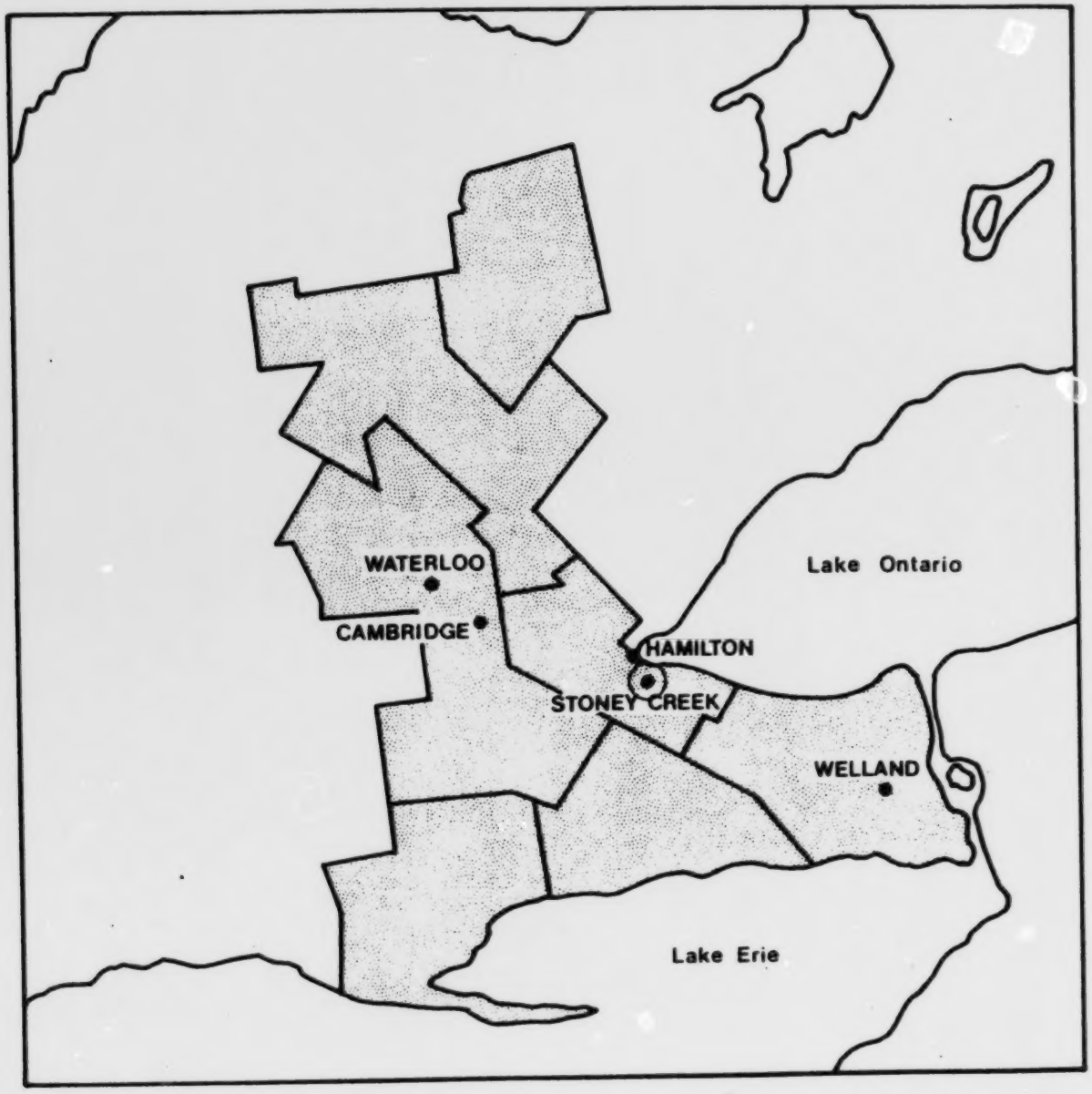
DISTRICT OFFICES

Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

West Central Region (2)

Ministry of the Environment
Ontario



DESIGN DATA - METRIC

GRAND VALLEY

PROJECT: Village of Grand Valley WPCP

PROJECT NO.: 1-0018-66

TREATMENT: Oxidation Ditch

DESIGN FLOW: 0.600 $10^3m^3/d$

BOD - 200 mg/l

SS - 200 mg/l

RAW SEWAGE PUMPING
2, FLYGT CP100 Size: 28.0 l/s @ 8.2m TDH

GRIT CHANNELS
2, each 13.1m x .6m w x .6m swd
Volume (each) $4.9m^3$ Detention: 12 min.
Bar screens in GRIT chamber

OXIDATION DITCH
Length 48.5m Design water level 1.4m
Volume: $590.98m^3$ Detention: 24 hours
Rotor Type: Pumps and Softeners
Size: 8.4m dia. x 3.05m length
Motor: 5.6 kW 1750 rpm

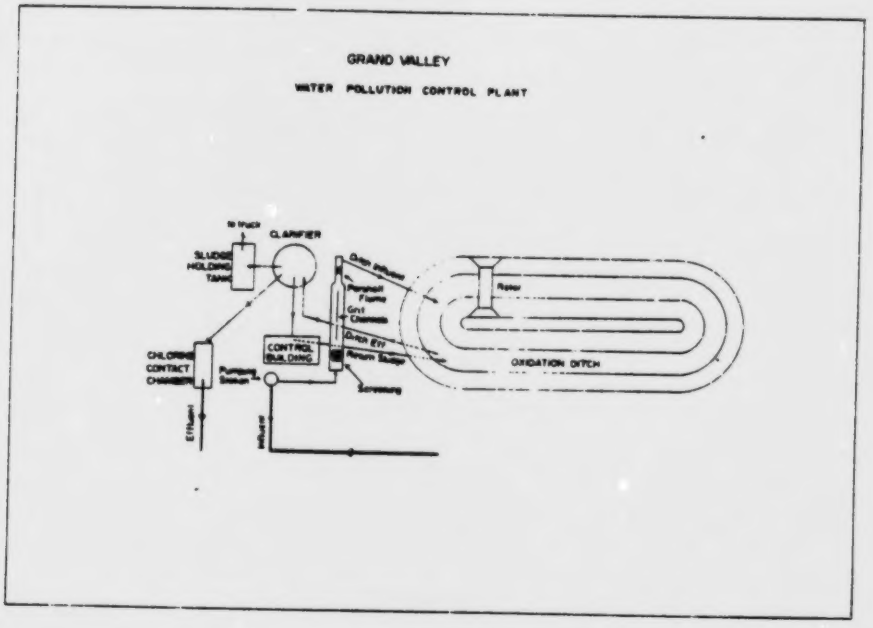
CLARIFIER
5.5m dia. x 3.1m swd
Volume: $74.01m^3$ Detention: 3.0 hours
Collector mechanism type DORR-OLIVER-LONG

SLUDGE PUMPS
2 Type: CRANE DEMING
Size - 9.5 l/s @ 3.4 m TDH

SLUDGE HOLDING TANK
3.7m x 2.4m x 2.9m swd
Volume: $23.03m^3$ Detention: 58 min.

CHLORINE CONTACT CHAMBER
5.0m x 1.8m x 1.5m
Volume: (total) $12.233m^3$ Detention: 30 min.

CHLORINATOR
BIF Hypochlorinator
Capacity .694 l/s @ 862 kPa



DESIGN DATA - IMPERIAL

PROJECT: Village of Grand Valley WPCP

PROJECT NO. 1-0018-66

TREATMENT: Oxidation Ditch

DESIGN FLOW: 0.132MGD

BOD - 200 mg/l

SS - 200 mg/l

RAW SEWAGE PUMPING:
2, FLYGT CP100 Size: 370 IGPM at 27' TDH

GRIT CHANNELS:
2, each 43' x 2'w x 2' swd
Volume (each) 1073 I.G. Detention: 12 min.
Bar screens in GRIT chamber

OXIDATION DITCH:
Length 159' Design water level 4.8'
Volume: 130,000 I.G. Detention: 24 hours
Rotor Type: Pumps and Softeners
Size: 27.5" dia. x 10' length
Motor: 7½ HP 1750 rpm

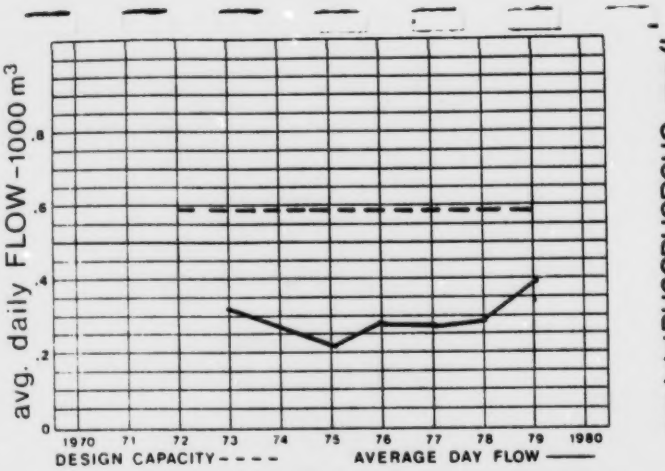
CLARIFIER:
18' dia. x 10.25' swd
Volume: 16,240 I.G. Detention: 3.0 hours
Collector mechanism type 'DORR-OLIVER-LONG'

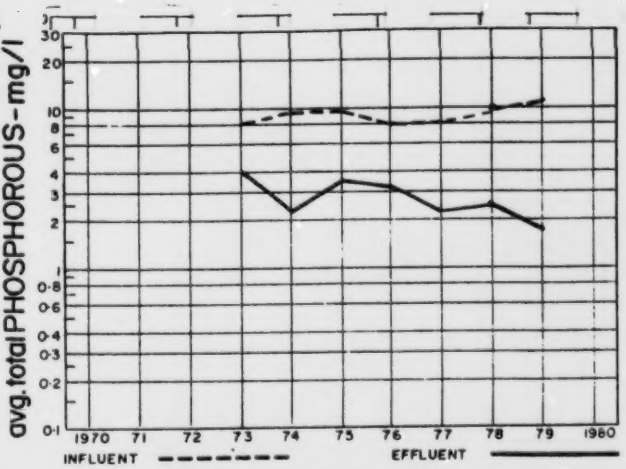
SLUDGE PUMPS:
2 Type: CRANE DEMING
Size: 150 IMGPM at 11' TDH

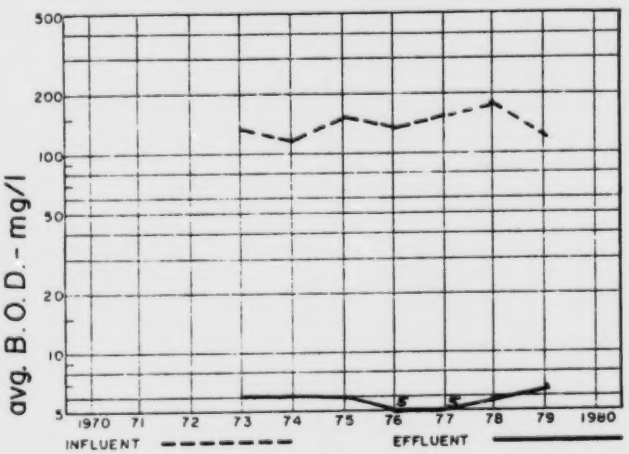
SLUDGE HOLDING TANK:
12' x 8' x 9.5' swd
Volume: 5242 IG Detention: 58 min.

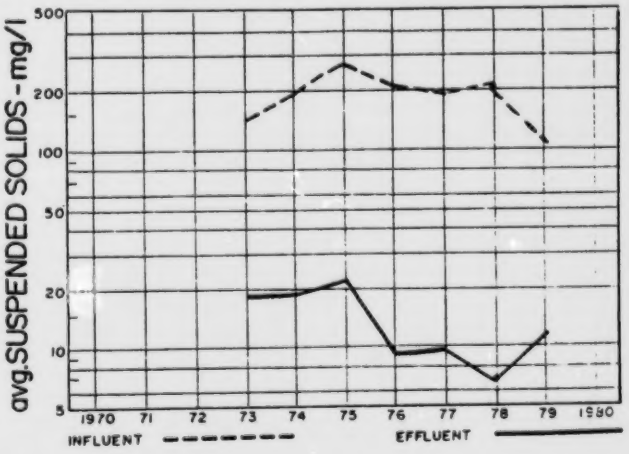
CHLORINE CONTACT CHAMBER:
19' x 6' x 5' swd (5-passes)
Volume: (total) 2691 I.G. Detention: 30 min.

CHLORINATOR:
BIF Hypochlorinator
Capacity 11 IMGPD at 125 psi









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110000301 GRAND VALLEY WPCP

MUNICIPALITY : GRAND VALLEY
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,160
POPULATION SERVED : 1,200
PERCENT SERVED : 103.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.600 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	6.855	.221	.491		175.0	13.0	92	1.1	211.0	17.2	91	1.3	13.5	3.8	71	.066
FEB	4.842	.177	.228		160.0	14.2	91	.7	177.0	22.1	87	.7	11.3	5.1	54	.030
MAR	26.454	.853	2.161		62.0	8.0	87	1.4	103.0	20.5	80	2.1	2.7	1.5	44	.032
APR	13.477	.449	1.111		42.0	14.0	66	.3	48.2	19.7	59	.3	2.3	1.3	43	.013
MAY	12.450	.400	.610		70.0	4.5	93	.8	122.0	9.0	92	1.4	5.6	1.0	80	.056
JUN	6.820	.230	.280		170.0	5.5	96	1.1	238.0	9.3	96	1.5	11.0	2.0	81	.081
JUL	5.910	.190	.230		195.0	3.2	98	1.1	279.0	9.1	96	1.5	18.0	1.8	90	.096
AUG	5.590	.180	.220		140.0	2.0	98	.7	297.0	10.0	96	1.6	12.0	1.6	86	.058
SEP	5.500	.180	.220		183.0	2.4	98	.9	261.0	7.0	97	1.3	13.0	1.5	88	.063
OCT	5.800	.190	.230		145.0	5.2	96	.8	288.0	6.7	97	1.6	13.0	1.1	91	.069
NOV	8.840	.290	.690		110.0	1.8	98	.9	152.0	6.0	96	1.2	11.0	.8	92	.090
DEC	10.820	.350	1.150		114.0	3.0	97	1.2	169.0	12.3	92	1.6	9.8	9	90	.095
TOTAL	113.358							11.4				16.8				.729
AVERAGE		.309			130.5	6.4	95		195.1	12.4	93		10.2	1.8	81	
MAXIMUM			2.161													
NO. OF SAMPLES					24	24			52	52			24	23		

DESIGN DATA - METRIC

HALDIMAND (CAYUGA)

PROJECT: Haldimand-Norfolk (Cayuga) WPCP

PROJECT NO.: 1-0043-66

DESIGN FLOW

0.909 $10^3 m^3/d$

GRIT REMOVAL

Type: Manually cleaned channels
Size: Two 5.6m x 1.46m x 0.8m deep

AERATION TANK

Type: Oxidation ditch with one Pumps & Softeners Ltd. rotor
Size: 662.688 m^3
Detention: 65 hr.
Flow Velocity: 0.305 m/s

FINAL CLARIFIER

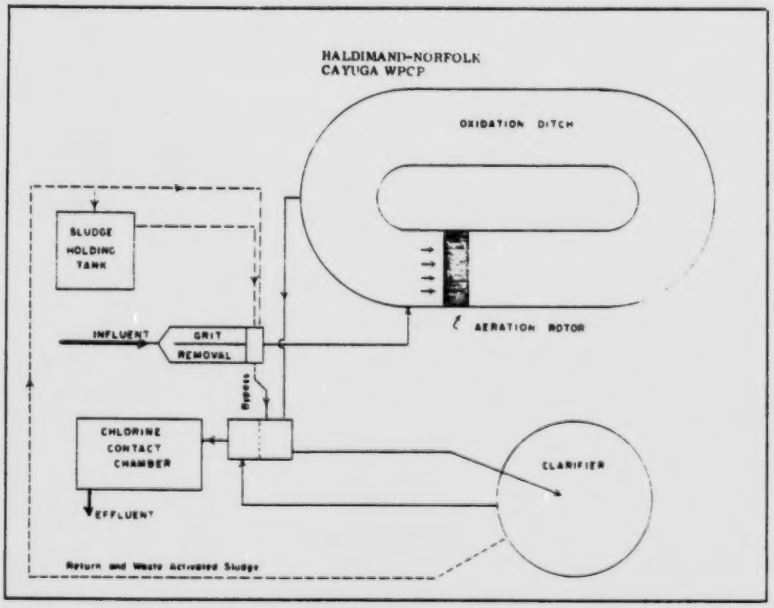
Type: Dorr-Oliver
Size: One 7.3m dia. x 3.7 m swd
153.655m^3 overflow rate
at design capacity 21.51 $m^3/m^2 \cdot d$

CHLORINATION

Type: Gas
Size: 22.68 kg/day

CONTACT TANK

Size: 21.594 m^3
Detention: 34 min.



DESIGN DATA - IMPERIAL

Project: Haldimand-Norfolk (Cayuga) WPCP

Project No: 1-0043-66

DESIGN FLOW

200,000 gpd

GRIT REMOVAL

Type: Manually cleaned channels
Size: Two 18'6" x 1'6" x 2'6" deep

AERATION TANK

Type: Oxidation ditch with one Pumps & Softeners Ltd. rotor
Size: 23,400 cu. ft. or 146,000 gal.
Detention: 65 hr
Flow Velocity: 1 fps (min)

FINAL CLARIFIER

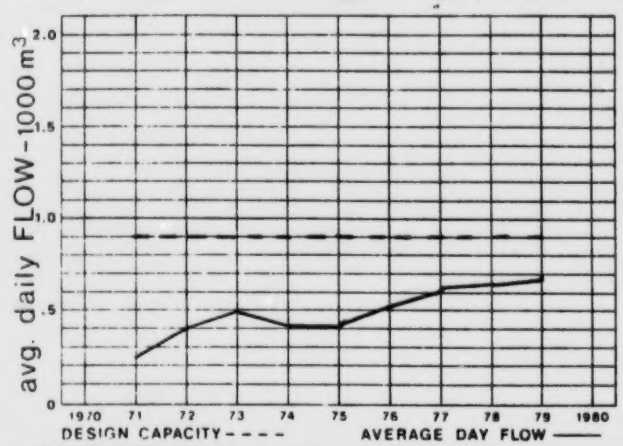
Type: Dorr-Oliver
Size: One 24' dia x 12' swd
(33,800 gal) overflow rate
at design capacity 440 gal/ft^2/day

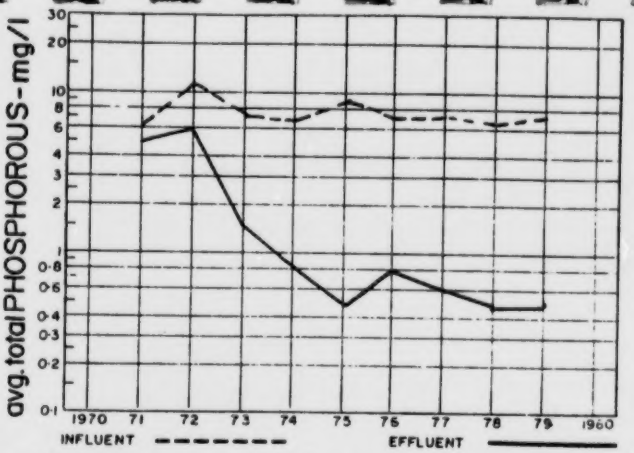
CHLORINATION

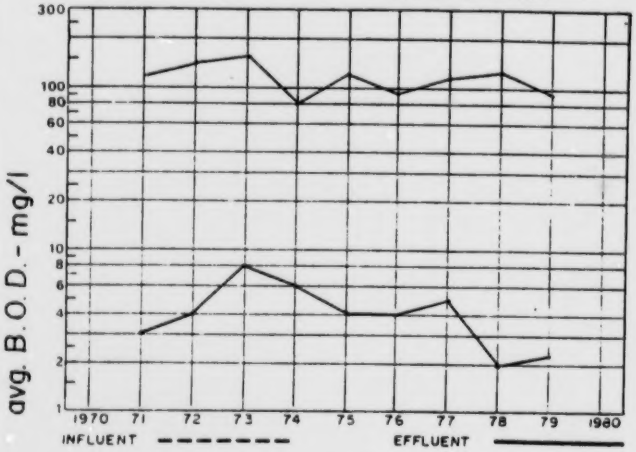
Type: Gas
Size: 50 lb/day

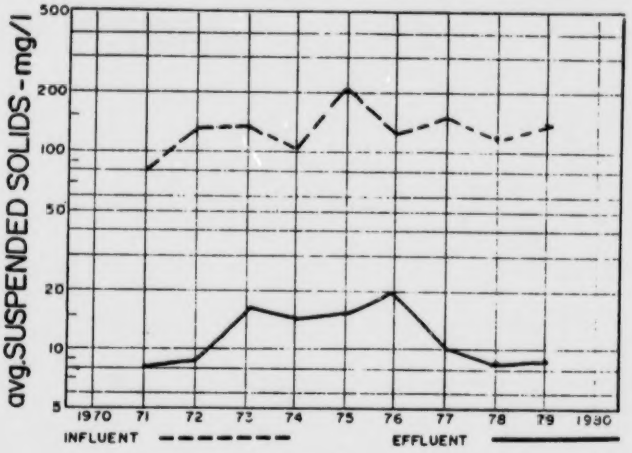
CONTACT TANK

Size: 4750 gal
Detention: 34 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000089 CAYUGA W P C P

MUNICIPALITY : HALDIMAND (CAYUGA)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL

CURRENT POPULATION : 16,427
POPULATION SERVED : 1,100
PERCENT SERVED : 6.6

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BODS : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	26.326	.849	2.559		85.0	1.7	98	2.1	391.0	8.3	97	10.0	4.3	.5	88	.100
FEB	18.448	.686	1.796		90.0	4.0	95	1.5	150.0	5.5	96	2.6	6.6	.6	90	.111
MAR	32.572	1.051	2.891		90.0	4.0	95	2.8	117.0	9.5	91	3.5	5.2	.5	90	.153
APR	38.550	1.285	2.827		56.0	1.9	96	2.0	77.5	5.0	93	2.7	5.1	.4	92	.181
MAY	17.141	.552	.757		90.0	1.4	98	1.5	107.5	10.0	90	1.6	7.5	.6	90	.117
JUN	13.725	.457	.707		90.0	2.4	97	1.2	95.0	6.0	93	1.2	6.4	.8	88	.076
JUL	13.595	.438	.707		116.0	1.8	98	1.5	148.0	5.6	96	1.9	8.9	1.1	87	.108
AUG	13.878	.447	.777		92.0	1.2	98	1.2	102.5	7.5	92	1.3	8.5	.2	97	.115
SEP	16.694	.556	2.030		165.0	2.0	98	2.7	182.5	6.0	96	2.9	9.3	.3	96	.149
OCT	15.590	.503	1.787		67.0	1.2	98	1.0	112.5	7.0	93	1.6	7.2	.2	96	.108
NOV	18.333	.611	1.414		115.5	3.5	96	2.0	152.5	10.5	93	2.6	9.1	.3	96	.162
DEC	22.879	.738	2.324		117.5	3.5	97	2.6	127.5	15.5	87	2.5	8.3	.6	91	.174
TOTAL	247.731							22.6				34.9				1.552
AVERAGE		.681			97.8	2.3	97		146.9	8.0	94		7.2	.5	92	
MAXIMUM			2.891													
NO. OF SAMPLES					24	24			24	24			24	23		

DESIGN DATA - METRIC

WOOLWICH (ST. JACOBS)

PROJECT: Woolwich Twp. (St. Jacobs) WPCP

PROJECT NO.: 1-0063-67

TREATMENT: Extended Aeration

DESIGN FLOW: 0.95 $10^3 m^3/d$

RAW SEWAGE PUMPING:

Two, Type: FLYGT CP-3150
Size: 37.85 l/s @ 7.31 TDH

GRIT CHAMBERS:

Two, 5.8m x 0.5m x 0.7m
Volume (each) 1.909m^3
Detention: (each) 2.8 min.

OXIDATION DITCH:

Volume: 909.2 m^3
WL Dept. 1.5m Detention: 22.8 hours

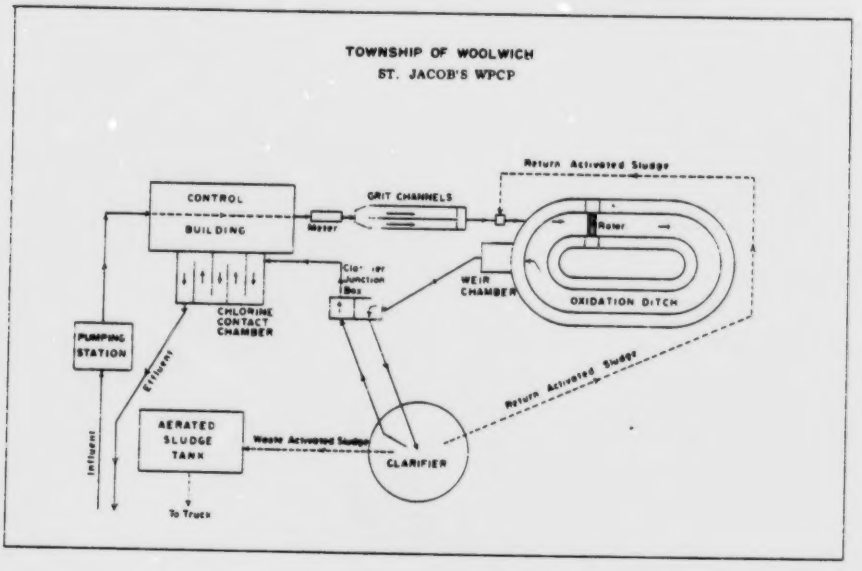
Rotor - Type: Pumps and Softners
Size: 4.57 m length (2)

CLARIFIER:

7.3m dia. x 2.9m swd
Volume: 122.74m^3
Detention: 3.1 hours
Mechanism: DORR OLIVER LONG
Overflow Rate: 22.732 m^3/m^2-d

CHLORINE CONTACT CHAMBER:

5 passes, 3.7m x .8m x 1.5m awl
Volume: 21.82 m^3
Detention: 33 min.



DESIGN DATA - IMPERIAL

PROJECT: Woolwich Twp (St. Jacobs) WPCP

PROJECT NO. 1-0063-67

TREATMENT: Oxidation Ditch

DESIGN FLOW: 0.21 MGD

BOD - 200 mg/l

SS - 200 mg/l

RAW SEWAGE PUMPING:
Two, Type: FLYGT CP-3150
Size: 800 USGPM at 24' TDH

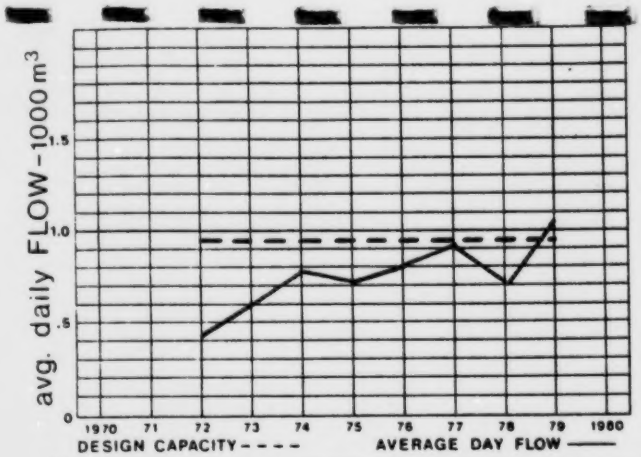
GRIT CHANNELS:
Two, 19' x 1.8' x 2.2'
Volume (each) 420 I. Gal.
Detention: (each) 2.8 min.

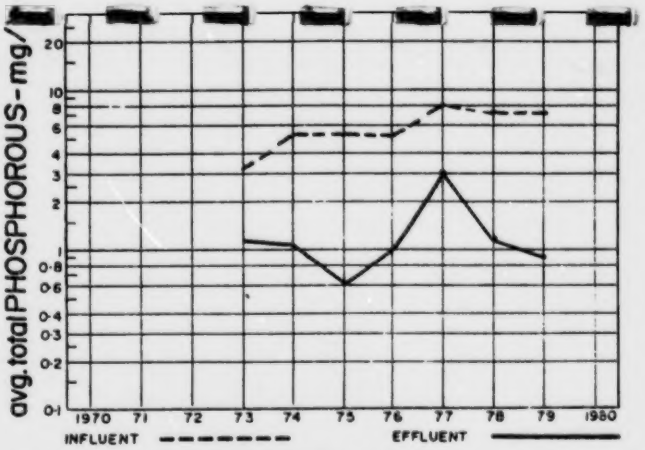
OXIDATION DITCH:
Volume: 200,000 I. Gal.
WL Dept. 5' Detention: 22.8 hours

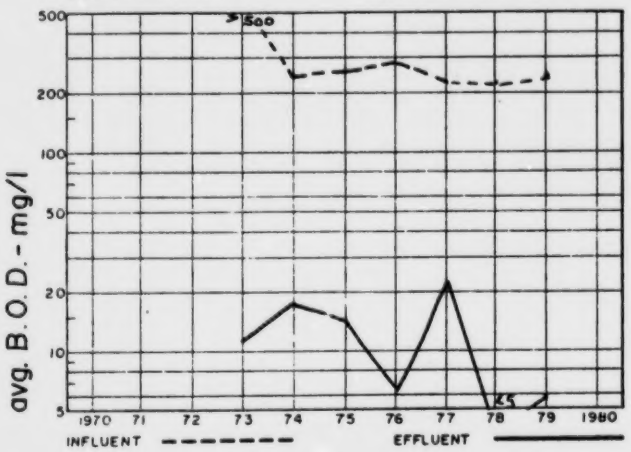
Rotor - Type: Pumps and Softners
Size: 15' length (2)

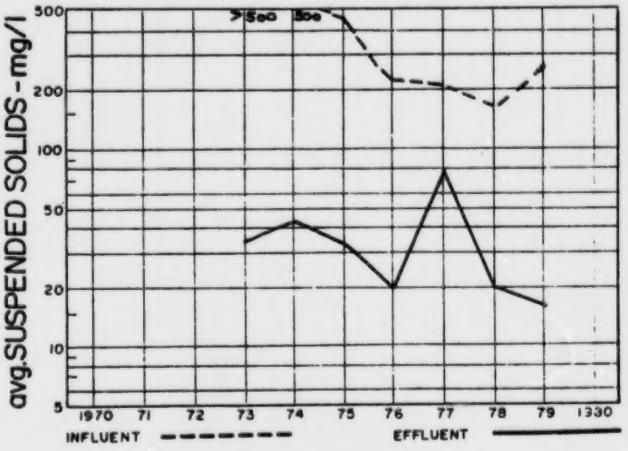
CLARIFIER:
24' dia. x 9.5' swd
Volume: 27,000 I. Gal.
Detention: 3.1 hours
Mechanism: DORR OLIVER LONG
Overflow Rate: 465 gpd/sq. ft.

CHLORINE CONTACT CHAMBER:
5 passes, each 12.3' x 2.5' x 5' awl
Volume: 4,800 I. Gal.
Detention: 33 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001211 — ST JACOBS POLICE VILLAGE PLANT

MUNICIPALITY : WOOLWICH (ST.JACOBS)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL

CURRENT POPULATION : 16,392
POPULATION SERVED : 1,155
PERCENT SERVED : 7.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.984 1000 M3 — DESIGN BODS : 200.0 MG/L — DESIGN SUSP.SOLIDS : 200.0 MG/L

<--- FLOW DATA					---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	29.049	.937	1.768		155.0	6.8	95	4.3	174.0	27.0	84	4.2	4.9	1.2	75	.107
FEB	24.457	.873	1.988		240.0	10.5	95	5.6	189.0	21.8	88	4.0	6.8	1.2	82	.137
MAR	59.461	1.918	3.264		58.0	7.7	86	2.9	90.0	29.0	67	3.6	6.0	2.1	65	.232
APR	61.162	2.038	3.885		109.0	6.8	93	6.2	62.0	17.0	72	2.7	3.5	.9	72	.155
MAY	27.543	.888	2.880		128.0	3.6	97	3.4	137.0	9.2	93	3.5	5.1	.4	92	.129
JUN	25.014	.834	1.605		53.0	12.5	76	1.0	235.0	14.0	94	5.5	4.2	.1	95	.101
JUL	17.781	.573	.761		229.0	2.7	98	4.0	130.0	5.0	96	2.2	7.8	1.5	80	.112
AUG	16.261	.524	.677		199.0	2.5	98	3.1	233.0	9.0	96	3.6	9.2	.9	89	.134
SEP	18.693	.623	.938		290.0	1.8	99	5.3	288.0	9.0	96	4.8	6.6	2.0	69	.086
OCT	20.608	.664	.978		610.0	2.7	99	12.5	629.0	13.5	97	12.6	12.2	.2	98	.247
NOV	36.583	1.219	2.037		550.0	6.3	98	19.8	488.0	16.0	96	16.5	7.8	.2	97	.277
DEC	42.383	1.367	5.605		290.0	5.0	98	12.0	662.0	32.0	95	28.7	18.0	.2	98	.751
TOTAL	378.995							80.7				90.4				2.468
AVERAGE		1.038			242.5	5.7	97		273.0	16.8	93		7.6	.9	87	
MAXIMUM			5.605													
NO. OF SAMPLES					30	30			71	64			31	27		

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

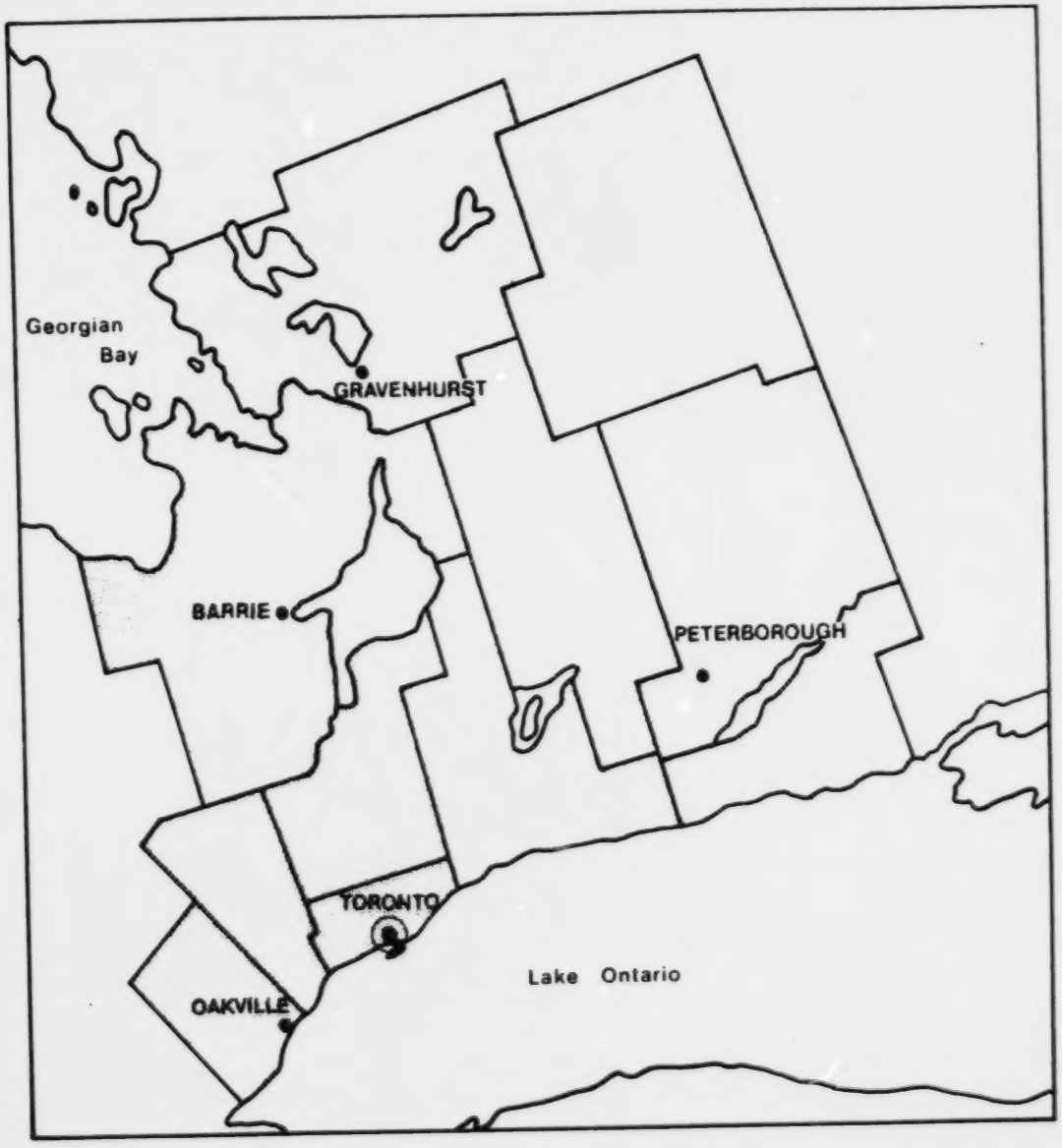
Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386



Central Region
③

Ministry
of the
Environment

PROJECT: Fenelon Falls WPCP

PROJECT NO: 1-0095-67

TREATMENT: Extended Aeration

DESIGN FLOW: 1.00 $10^3 m^3/d$

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 250 mg/l

FRANCES ST. P.S.
Pumps:
Type: Two submersibles
Size: each 6.283 l/s

OAK ST. P.S.
Pumps:
Type: Two, submersibles
Size: each 28.39 l/s

MAIN (PLANT) P.S.
Pumps:
Type: Three MORSE centrifugal
Size: each 41.6 l/s

GRIT CHANNELS
Size: Two, each 6.63m x .61m x .46m awd
Volume (each): 1.85 m^3
Retention(each): 2.7 min.

COMMINUTOR
Size: 25.4 cm
Bar screen/in bypass channel

OXIDATION DITCH
Width: 5.49m (at top)
Length: centres 30.48m apart

ROTOR
Type: pumps and softeners
Size: 4.27m x0.70m

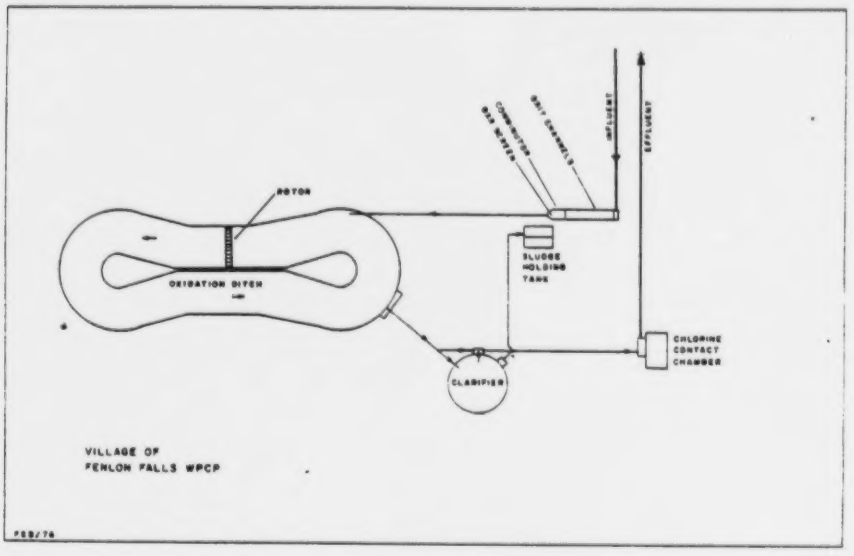
FINAL CLARIFIER
Type: one, circular
Size: 9.14m i.d. x 3.05m awd
Volume: 207.29m^3
Retention: 5.0 hr.
Loadings:
- Surface: 15.20 m^3/m^2.d
- Weir: 34.87 m^3/m.d

CHLORINE CONTACT CHAMBER
Size: one, 3.05m x 4.72m x 1.6m awd
Volume: 23.18 m^3
Retention: 33 min.

SLUDGE TRANSFER PUMP
Type: one, A.S. Leitch
Size: 16.2 l/s @ 14.02m TDH

SLUDGE HOLDING TANK
Type: two, rectangular
Size: each 3.67m x 1.5m x 2.7m awd
Volume: each 15.32 m^3

BLOWER
Type: one Utility Technology
Size: 18.38 l/s @ 41.37 kPa
Alum Stroage Tank capacity: 227.3m^3
ALUM STORAGE TANK Capacity: 227.3m^3



DESIGN DATA - IMPERIAL

PROJECT: Fenelon Falls WPCP

PROJECT NO. 1-0095-67

TREATMENT: Oxidation Ditch

DESIGN FLOW: 0.22 MIGD

BOD - Raw Sewage - 200 mg/l

SS - Raw Sewage - 250 mg/l

FRANCES ST. P.S.
Pumps:
Type: Two, submersibles
Size: each 83 IGPM

OAK ST. P.S.
Pumps:
Type: Two, submersibles
Size: each 375 IGPM

MAIN (PLANT) P.S.
Pumps:
Type: Three MORSE centrifugal
Size: each 550 IGPM

GRIT CHANNELS
Size: Two, each 21.75'x2'x1.5'awd
Volume(each): 407 I.G.
Retention(each): 2.7 min

COMMINUTOR
Size: 10-inch

Bar screen/in bypass channel

OXIDATION DITCH

Width: 18' (at top)
Length: centres 100' apart

ROTOR
Type: pumps and softeners
Size: 14'x2.3' dia.

FINAL CLARIFIER
Type: one, circular
Size: 30' i.d. x 10' awd
Volume: 45,600 I.G.
Retention: 5.0 hr
Loadings:
- Surface: 311 IG/ft^2/day
- Weir: 2340 I.G./ft/day

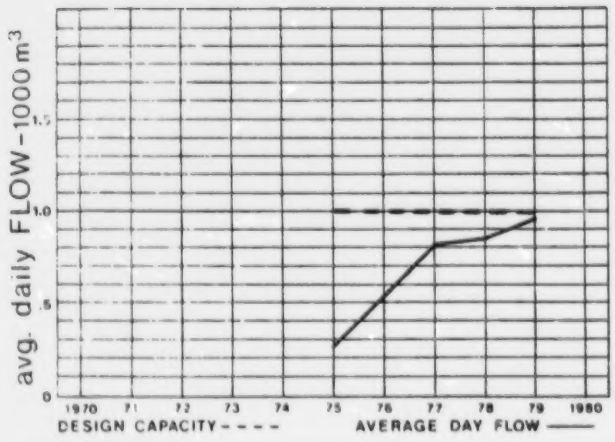
CHLORINE CONTACT CHAMBER
Size: one, 10'x15.5'x5.25'awd
Volume: 9100 I.G.
Retention: 33 min.

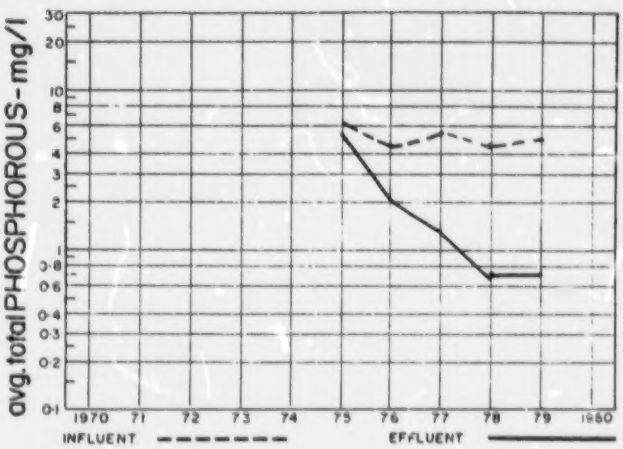
SLUDGE TRANSFER PUMP
Type: one, A.S.Leitch
Size: 211 gpm @ 46' TDH

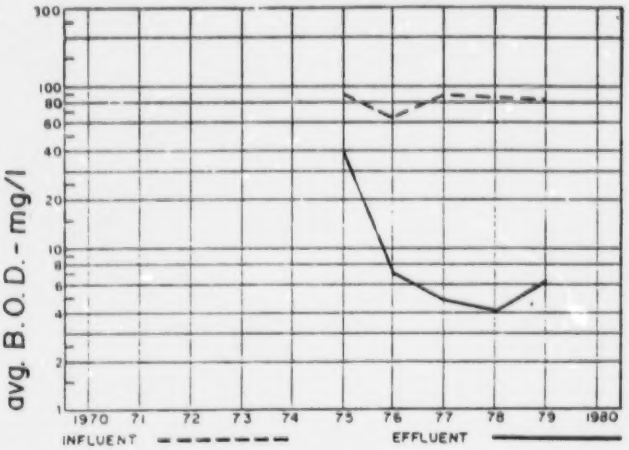
SLUDGE HOLDING TANK
Type: two, rectangular
Size: each 12'x5'x9'awd
Volume: each 3370 I.G.

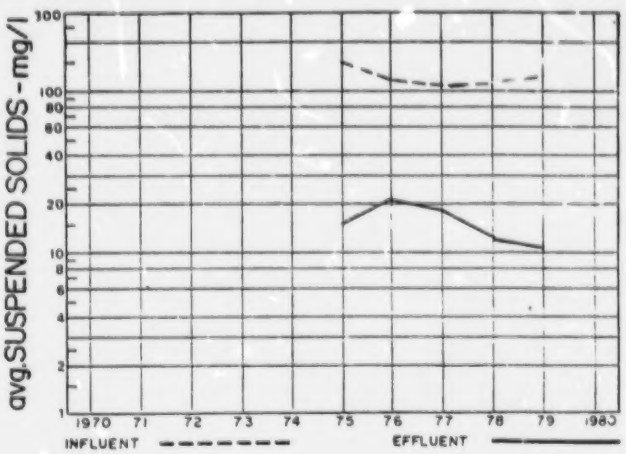
BLOWER
Type: one Utility Technology
Size: 44 cfm @ 6 psi

ALUM STORAGE TANK
Capacity: 5000 gal.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001612 FENELON FALLS WPCP

MUNICIPALITY FENELON FALLS
REGION 03 CENTRAL

TREATMENT FACILITY OXIDATION DITCH
PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 1,627
POPULATION SERVED : 1,378
PERCENT SERVED : 84.6

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.000 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	26.126	.841	1.355	2.341	60.0	12.0	80	1.2	90.0	9.0	90	2.1	3.9	.4	89	.091
FEB	22.707	.809	1.114	2.255	80.0	20.0	75	1.3	115.0	30.0	73	1.9	5.0	.7	86	.098
MAR	52.624	1.696	3.269	3.573	37.0	6.0	83	1.6	55.0	8.0	85	2.4	2.5	.3	88	.116
APR	36.890	1.230	1.990	2.600	50.0	6.5	87	1.6	105.0	5.0	95	3.6	3.2	3.4	-	-
MAY	34.950	1.130	1.520	2.890	95.0	5.5	94	3.1	65.0	10.0	84	1.9	2.9	.2	90	.092
JUN	28.380	.950	1.790	2.510	*	*			*	*			*	*		
JUL	27.040	.870	1.690	2.510	90.0	2.0	97	2.3	120.0	8.0	93	3.0	6.3	.7	88	.151
AUG	25.680	.830	.960	2.250	250.0	2.0	99	6.3	480.0	10.0	97	12.0	14.0	.7	94	.341
SEP	23.830	.790	1.040	2.040	52.0	2.0	96	1.1	95.0	10.0	89	2.0	4.6	.6	86	.095
OCT	29.170	.940	1.510	2.130	48.0	2.0	95	1.3	95.0	9.0	90	2.5	3.9	.3	91	.104
NOV	26.690	.890	1.480	2.300	74.0	6.5	91	1.8	145.0	10.0	93	3.6	5.3	.3	93	.132
DEC	26.150	.840	1.160	2.130	68.0	5.5	91	1.6	85.0	11.0	87	1.9	4.8	.3	92	.116
TOTAL	360.237							23.6				37.3				1.336
AVERAGE		.985			82.1	6.3	92		131.8	10.9	91		5.1	.7	85	
MAXIMUM			3.269	3.573												
NO. OF SAMPLES					11	11			11	11			11	11		

DESIGN DATA - METRIC

HASTINGS

PROJECT Village of Hastings

PROJECT NO. 1-0084-76

TREATMENT: Oxidation Ditch

DESIGN FLOW: 1.1 $10^3 m^3/d$

PRIMARY TREATMENT

Screening
Bar Screen with 5.0 cm x0.6 cm bars @ 2.5 cm c/c

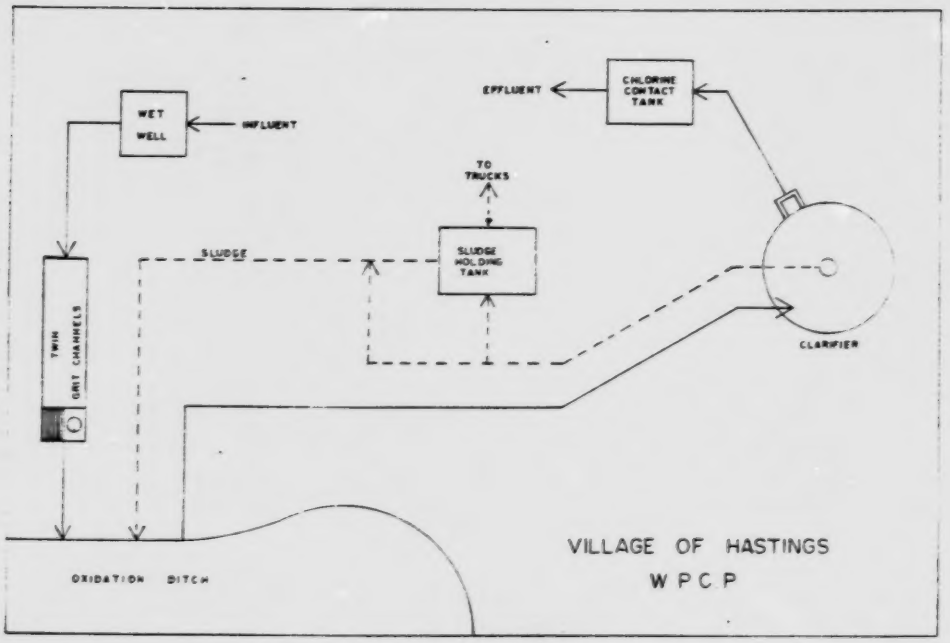
Grit Removal
2 Grit tanks 0.5m x 6.7m x 0.4m deep

SECONDARY TREATMENT

Oxidation Ditch
Volume: 1767.2 m^3
Detention: 40 hrs.
Motors: 3-14.9 kW @ 90 rpm.
Cage Rotor: 69.9 cm dia. x 18.3m long

Clarifier
Size: 8.8m dia. x 3.0m swd
Loading: Surface = 17.1 $m^3/m^2 \cdot d$
Weir = 38.1 $m^3/m \cdot d$

Sludge Handling
Storage Volume: 134.8 m^3
Blower: 39.7 l/s @ 41.4 kPa
8.4 l/s / 28.3 m^3



PROJECT Village of Hastings

DESIGN DATA - IMPERIAL

PROJECT NO. 1-0084-76

TREATMENT: Oxidation Ditch

DESIGN FLOW 0.233 MGD

PRIMARY TREATMENT

Screening
Bar Screen with 2" x $\frac{1}{2}$" bars @ 1"c/c

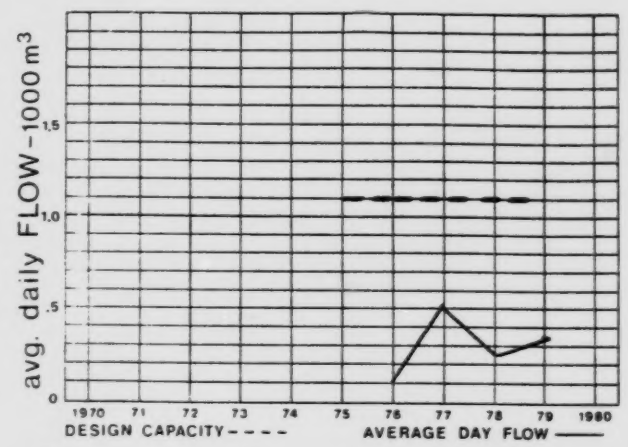
Grit Removal
2 Grit tanks 1.5' x 22' x 1.4' deep.

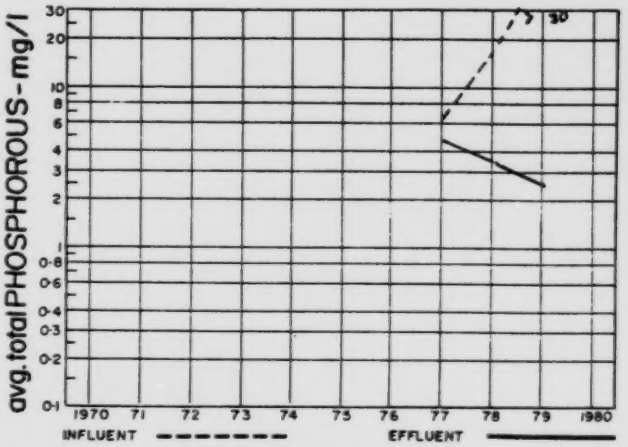
SECONDARY TREATMENT

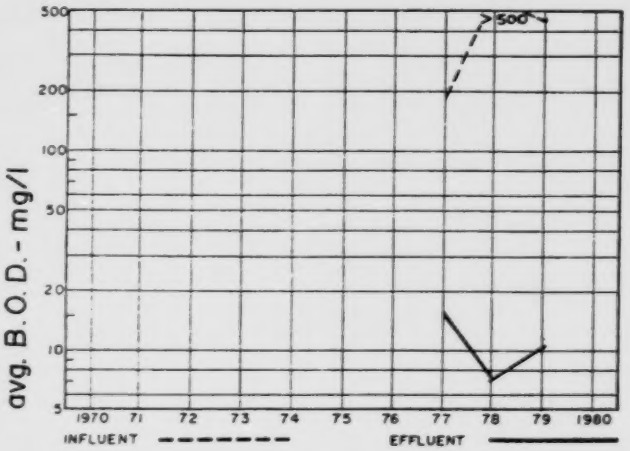
Oxidation Ditch
Volume: 62,400 $ft.^3$
Detention: 40 hrs.
Motors: 3 - 20 hp. @ 90 rpm.
Cage Rotor: 27$\frac{1}{2}$"dia. x 60' long.

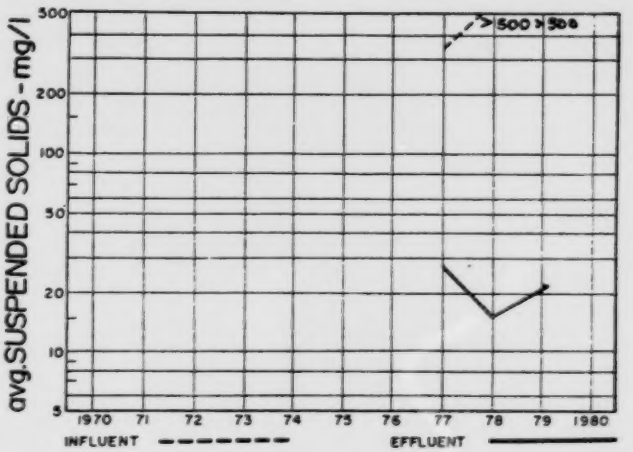
Clarifier
Size: 29' dia. x 10'SWD
Loading: Surface = 350 gpd/ft^2
Weir = 2540 gpd/ft

Sludge Handling
Storage Volume: 4760 $ft.^3$
Blower: 95 cfm @ 6 psi.
20 cfm/1000 $ft.^3$









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001827 HASTINGS WPCP

MUNICIPALITY : HASTINGS
REGION : 03 CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL
(THIS SYSTEM TREATS INDUSTRIAL & DOMESTIC WASTES)

* DATA NOT AVAILABLE

CURRENT POPULATION : 951
POPULATION SERVED : 777
PERCENT SERVED : 81.7

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.089 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	9.615	.309	.636		390.0	14.0	96	3.6	1515.0	32.0	97	14.2	38.5	*		
FEB	10.597	.377	.868		*	*			*	*			*	*		
MAR	30.695	.991	3.187		110.0	11.0	90	3.0	485.0	30.0	93	13.9	9.4	4.5	52	.150
APR	15.630	.520	.880		270.0	14.0	94	3.9	325.0	40.0	87	4.4	18.0	.8	95	.268
MAY	6.670	.220	.420		700.0	7.0	99	4.6	2808.0	11.0	99	18.6	41.6	.7	98	.272
JUN	6.250	.210	.540		*	*			1488.0	42.0	97	9.0	28.5	11.6	59	.106
JUL	8.230	.260	.530		510.0	7.0	98	4.1	991.0	36.0	96	7.8	80.0	3.3	95	.631
AUG	10.340	.330	.610		*	*			*	*			*	*		
SEP	7.330	.270	.380		230.0	1.2	99	1.6	750.0	6.0	99	5.4	17.0	.6	96	.120
OCT	7.270	.234	.400		780.0	12.0	98	5.5	2700.0	10.0	99	19.5	70.0	.8	98	.503
NOV	8.068	.268	.531		380.0	16.0	95	2.9	1950.0	15.0	99	15.6	58.0	.7	98	.482
DEC	15.252	.492	1.450		320.0	20.0	93	4.5	785.0	5.0	99	11.8	43.0	.5	98	.647
TOTAL	135.937							34.1				130.7				3.159
AVERAGE		.373			408.8	11.3	97		1379.7	22.7	98		40.4	2.6	93	
MAXIMUM			3.187													
NO. OF SAMPLES					10	10			11	11			11	9		

DESIGN DATA - METRIC

PROJECT: Village of Norwood WPCP

PROJECT NO. 1-0125-67

DESIGN FLOW: 0.727 $10^3 m^3/d$

DESIGN POPULATION: 1500

BOD - Raw Sewage - 200 mg/l

SS - Raw Sewage - 250 mg/l

RAW SEWAGE PUMPS
Type: Two, Pacific CB0330
Size: (each) 30.7 l/s

COMMINUTOR
Type: Heligear HTH1
Size: 25.4 cm

GRIT CHANNELS
Size: Two, .38m x 5.49m x .30m awd
Volume (each) .636 m^3
Retention (one) 1.3 hr.

OXIDATION DITCH
Volume: 538.43 m^3
Retention: 17.7 hrs.

ROTOR
Type: Pumps and Softeners
Size: 698.5mm dia. x 3.11m long

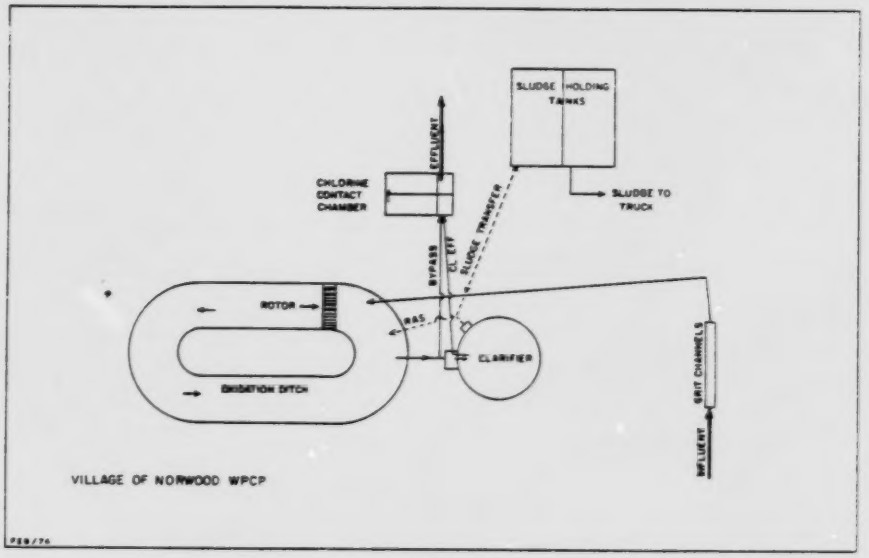
CLARIFIER
Size: One, 6.4m i.d. x 2.77m awd
Volume: 89.56m^3
Retention: 3.0 hr.

SLUDGE TRANSFER PUMP
Type: One carter 800 D
Size: 12.0 l/s

CHLORINE CONTACT CHAMBER
Type: Two-pass
Size: each pass 2.96m x 1.34m x 1.82m awd
Volume (total): 14.09m^3
Retention: 30 min.

SLUDGE HOLDING TANKS
Size: Two, 10.67m x 5.33m x 2.44m awd
Volume (total): 277.76m^3

BLOWER
Type: One Gatx DA105
Size: 7.46 kW



DESIGN DATA - IMPERIAL

PROJECT: Village of Norwood WPCP

PROJECT NO. 1-0125-67

DESIGN FLOW: 0.16 MIGD

DESIGN POPULATION: 1500

BOD - Raw Sewage - 200 mg/l

SS - Raw Sewage - 250 mg/l

RAW SEWAGE PUMPS
Type: Two, Pacific CB0330
Size: (each) 487 USGPM

COMMINUTOR:
Type: Heligear HTH1
Size: 10-inch

GRIT CHANNELS
Size: Two, 1.25'x19'x1'awd
Volume (each): 140 I.G.
Retention (one): 1.3 hr

OXIDATION DITCH
Volume: 118,000 I.G.
Retention: 17.7 hrs

ROTOR
Type: Pumps and Softeners
Size: 27.5" dia x 10.2'l

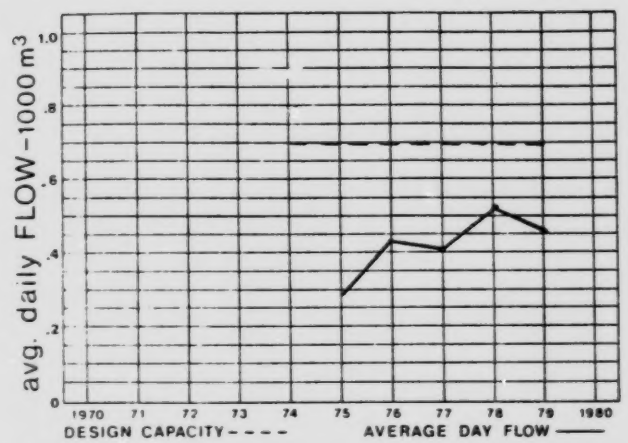
CLARIFIER
Size: One, 21'i.d. x 9.1'awd
Volume: 19,700 I.G.
Retention: 3.0 hr

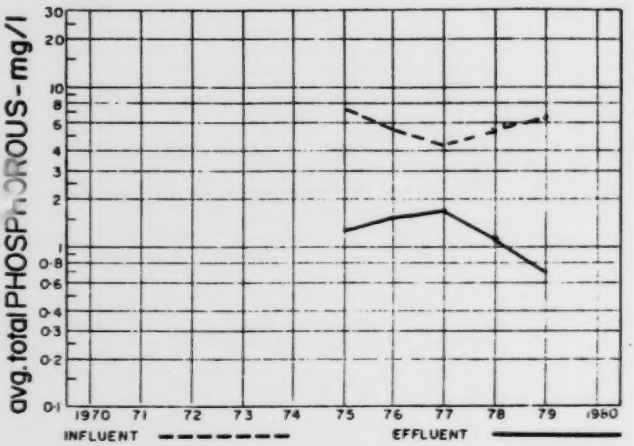
SLUDGE TRANSFER PUMP
Type: One carter 800 D
Size: 159 gpm

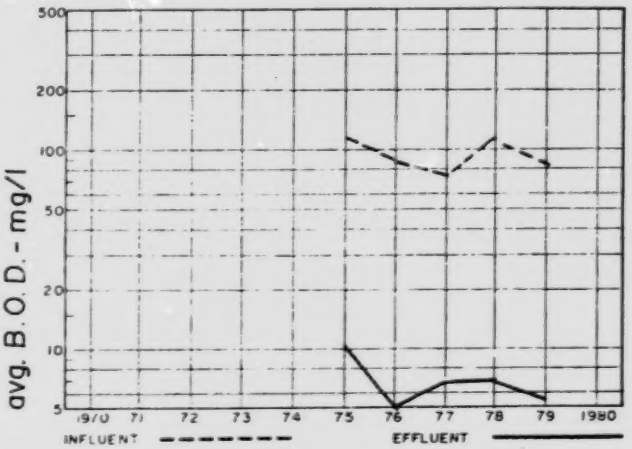
CHLORINE CONTACT CHAMBER
Type: Two-pass
Size: each pass 9.7' x 4.4' x 5.9' awd
Volume (total): 3100 I.G.
Retention: 30 min.

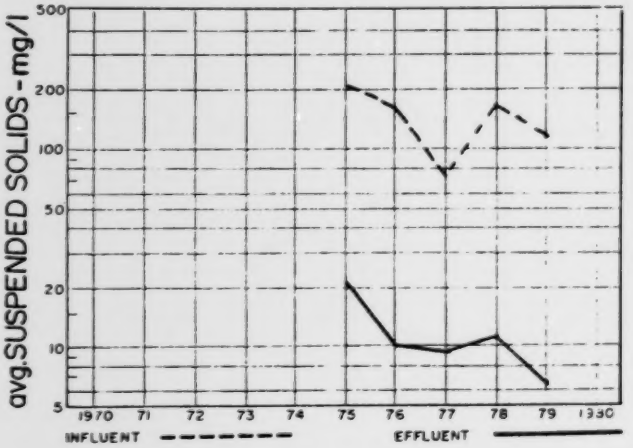
SLUDGE HOLDING TANKS
Size: Two, 35'x17.5' x 8' awd
Volume (total): 61,100 I.G.

BLOWER
Type: One Gatx DA105
Size: 10 HP









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110001499 NORWOOD WPCP

MUNICIPALITY : NORWOOD
REGION : 03 CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 1,288
POPULATION SERVED : 1,120
PERCENT SERVED : 86.9

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.727 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION					REDUCTION				REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	11.638	.373	.391	2.228	46.0	4.0	91	.4	95.0	6.0	93	1.0	4.0	.1	97	.045
FEB	10.669	.382	.641	2.228	158.0	16.0	89	1.5	215.0	25.0	88	2.0	9.1	1.0	89	.086
MAR	20.816	.673	.977	2.228	*	4.0			*	6.0			*	.2		
APR	21.025	.701	.782		65.0	5.0	92	1.2	87.5	5.0	94	1.7	3.4	.4	85	.061
MAY	15.909	.513	.636		140.0	6.9	95	2.1	180.0	5.0	97	2.7	8.7	1.6	81	.113
JUN	12.570	.419	532		13.0	1.2	90	.1	20.0	5.0	75	.1	1.4	1.5	-	-
JUL	11.636	.375	.409		105.0	2.0	98	1.1	120.0	5.0	95	1.3	9.3	1.4	84	.092
AUG	13.004	.419	436	.370	140.0	1.6	98	1.8	215.0	5.0	97	2.7	9.3	.6	93	.114
SEP	12.496	.416	.436	.380	110.0	4.0	96	1.3	180.0	5.0	97	2.1	8.6	.5	93	.100
OCT	13.603	.438	.482	.450	85.0	1.4	98	1.1	160.0	.5	99	2.1	8.3	.1	98	.111
NOV	12.322	.410	.468		17.0	3.1	81	.1	25.0	5.0	80	.2	1.8	1.0	41	.009
DEC	13.598	.439	.536	.520	35.5	4.5	87	.4	57.5	5.0	91	.7	3.8	.6	82	.043
TOTAL	189.286							11.5				17.1				.774
AVERAGE		.463			83.1	4.4	94		133.1	6.4	94		6.1	.7	87	
MAXIMUM			.977	2.228												
NO. OF SAMPLES					18	20			18	20			18	21		

Ministry of the Environment
Ontario

Northeastern Region

⑤

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

Sault Ste. Marie
445 Albert St. E.
705-949-4640

Timmins
83 Algonquin Blvd. W.
705-264-9474

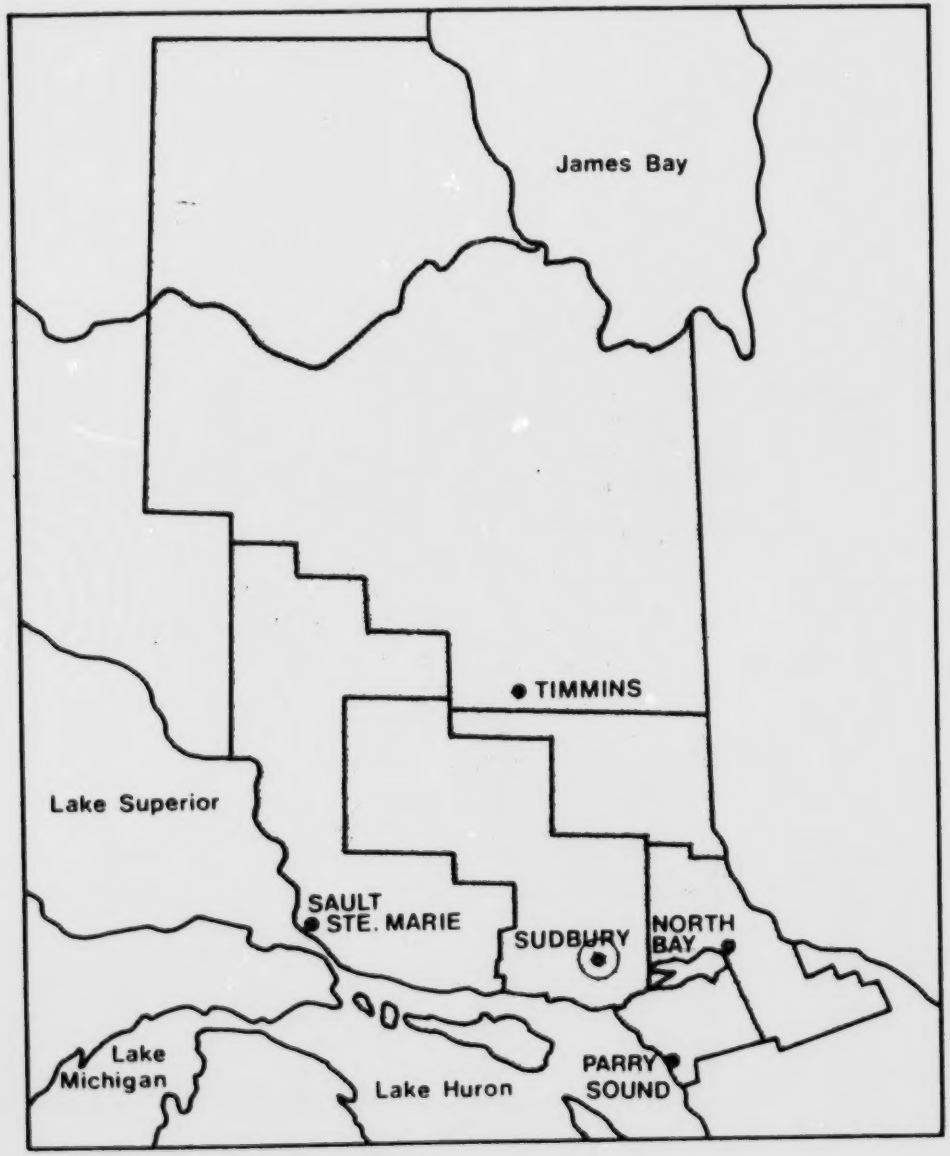
Parry Sound
74 Church St.
705-746-2139

Northeastern Region

5

Ministry of the Environment

Ontario



DESIGN DATA - METRIC

NICKEL CENTRE (CONISTON)

PROJECT: Nickel Centre (Coniston) WPCP

PROJECT NO. 2-0008-57

TREATMENT: Oxidation Ditch

DESIGN FLOW: 1.591 $10^3 m^3/d$

BOD - Raw Sewage 200 mg/l
Removal 93%

SS - Raw Sewage 250 mg/l
Removal 93%

NEW PLANT

OXIDATION DITCH:
Capacity: 841.0 m^3
Detention: 22.4 hr.
Operating Depth 1.5m

Rotor: Two, 2.5m width each powered by 7.5 kW motor

CLARIFIER:
9.1m dia. x 2.4m swd
Volume: 159.1 m^3 Detention: 4.2 hours
Overflow Rate: 13.7 $m^3/m^2 \cdot d$

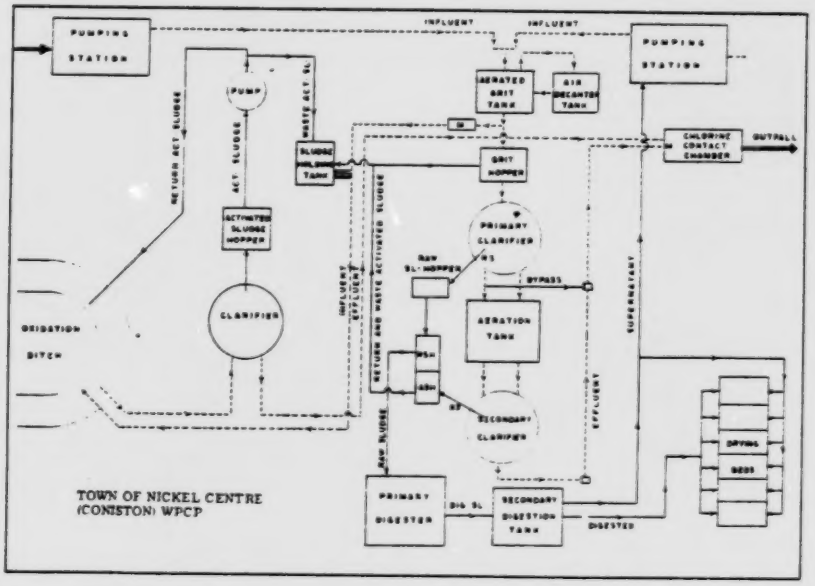
SLUDGE HOLDING TANK:
3.9m x 3.4m x 3.9m swd
Volume: 50.0m^3

CHLORINE CONTACT CHAMBER:
Four passes, each 4.6m x .8m x 2.4m swd
Volume: 32.7m^3
Detention: 30 min.

CHLORINATOR:
Type: Fisher and Porter

OUTFALL

254mm transite to creek



DESIGN DATA - IMPERIAL

PROJECT: Nickel Centre (Coniston) WPCP

PROJECT NO. 2-0008-57

TREATMENT: Oxidation Ditch

DESIGN FLOW: 0.350 mgd

BOD - Raw Sewage 200 mg/l
Removal 93%

SS - Raw Sewage 250 mg/l
Removal 93%

NEW PLANT

OXIDATION DITCH:
Capacity: 185,000 gal.
Detention: 22.4 hr.
Operating Depth 5 ft.

Rotor: Two, 8'2" width, each powered by 10HP motor.

CLARIFIER:
30' dia. x 8' swd
Volume: 35,000 I. Gal. Detention: 4.2 hours
Overflow Rate: 280 I. Gal/ft^2/day

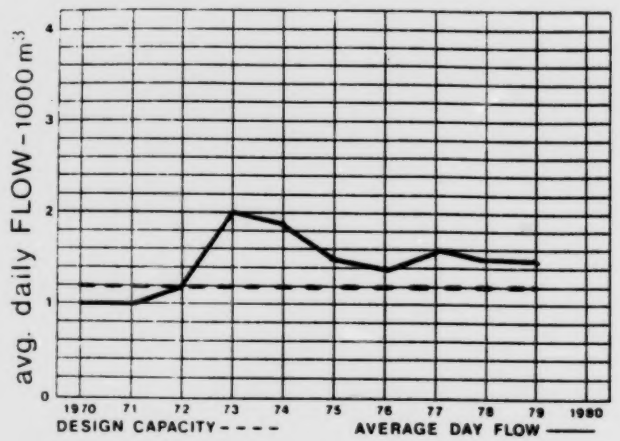
SLUDGE HOLDING TANK:
12.9' x 11' x 12.9' swd
Volume: 11,000 I. Gal.

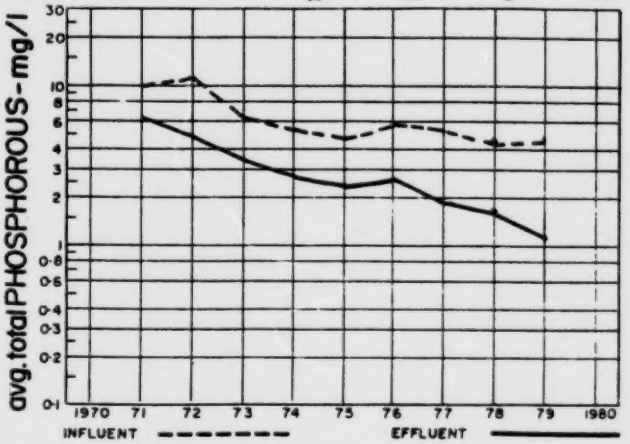
CHLORINE CONTACT CHAMBER:
Four passes, each 15' x 2.5' x 7.75' swd
Volume: 7,200 I. Gal.
Detention: 30 min.

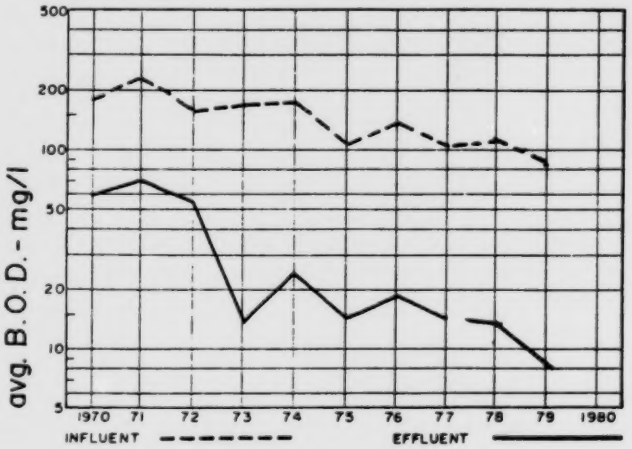
CHLORINATOR:
Type: Fisher and Porter

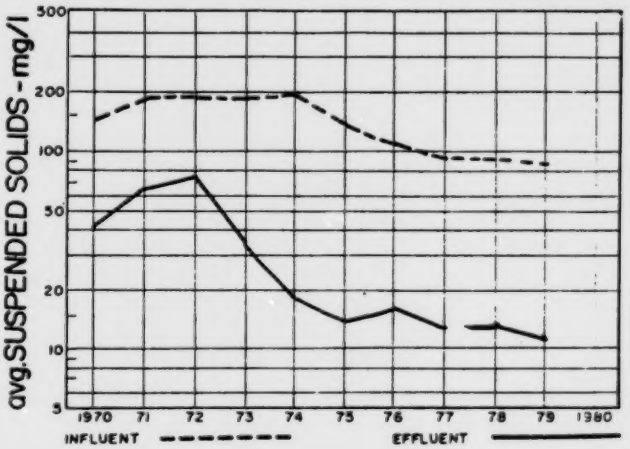
OUTFALL

- 10" Transite to creek









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000123 CONISTON W P C P OPER TO RUN IN 80 MUNICIPALITY : NICKEL CENTRE (CONISTON)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : OXIDATION DITCH
CONVENTIONAL SECONDARY

* DATA NOT AVAILABLE

CURRENT POPULATION : 12,615
POPULATION SERVED : 2,575
PERCENT SERVED : 20.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.581 1000 M3 DESIGN BODS : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	41.996	1.355	1.559	2.077	135.0	11.0	91	5.2	100.0	13.0	87	3.6	5.6	1.2	78	.185
FEB	43.314	1.546	2.041	3.019	118.0	7.0	94	4.8	91.0	12.0	86	3.4	5.6	2.0	64	.156
MAR	51.011	1.700	2.237	11.320	72.0	9.5	86	3.1	78.0	13.7	82	3.2	3.4	1.9	44	.077
APR	41.651	1.390	2.183		45.0	5.5	87	1.6	53.0	14.5	72	1.6	1.7	1.2	29	.021
MAY	50.207	1.619	2.273		75.0	9.3	87	3.2	90.0	9.0	90	4.0	3.4	1.0	70	.120
JUN	49.040	1.630	2.088		100.0	8.3	91	4.4	83.0	9.8	88	3.5	4.5	1.7	62	.137
JUL	45.776	1.477	1.871	3.209	116.0	14.5	87	4.6	85.4	13.6	84	3.2	5.1	2.1	58	.138
AUG	47.874	1.544	2.198	8.490	90.0	3.5	96	4.1	96.7	9.7	89	4.1	5.2	1.4	73	.182
SEP	49.554	1.599	2.314	3.396	72.0	11.0	84	3.0	103.0	11.0	89	4.5	3.8	.9	76	.146
OCT	38.530	1.243	2.201	3.209	62.0	9.5	84	2.0	94.7	12.6	86	3.1	3.7	.9	74	.106
NOV	55.510	1.850	2.651	5.273	58.0	6.5	89	2.8	79.8	9.1	88	3.9	6.2	1.4	77	.286
DEC	58.911	1.900	2.864	7.546	*	2.0			78.0	9.0	88	4.0	*	.7		
TOTAL	573.374							39.3				42.7				1.534
AVERAGE		1.571			85.7	8.1	90		86.0	11.4	86		4.3	1.3	68	
MAXIMUM			2.864	11.320												
NO. OF SAMPLES					15	15			105	99			15	15		

TERTIARY TREATMENT PLANTS

Ministry of the Environment

Ontario

Southwestern Region

(1)

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Southwestern Region

(1)

Ontario

Ministry of the Environm

DESIGN DATA - METRIC

STRATFORD

PROJECT City of Stratford WPCP

PROJECT NO. 1-0156-68

TREATMENT Activated Sludge

DESIGN FLOW 27.28 $10^3 m^3/d$

DESIGN POPULATION 30,000

BOD - Raw Sewage 140 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 95%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model B (11.0m)

Grit Removal

Type: Dorr Detritor
Size: One 6.1m x 6.1m x .3m ($11.37 m^3$)
Retention: 0.9 min.

Primary Sedimentation

Type: Infilco
Size: Four 24.4m x 3.2m swd ($6.0 \times 10^3 m^3$)
NOTE: Two used for storm flows only.
Retention: 2.7 hr (2 cl)
Loading: Surface, 25.3 $m^3/m^2 \cdot d$
Weir, 178.8 $m^3/m \cdot d$

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air; triple-pass
Size: Five 28.1m x 7.8m (avg) x 4.0m ($4.41 \times 10^3 m^3$)
Retention: 3.9 hr

Diffusers

Type: Activated Sludge Ltd. Alundum Domes

Air Supply

Type: Roots-Connersville
Size: Three 731.3 l/s

Secondary Sedimentation

Type: Infilco
Size: Two 24.3m dia. x 2.4m swd ($3.205 \times 10^3 m^3$)
Retention: 2.7 hr
Loading: Surface, 29.3 $m^3/m^2 \cdot d$

CHLORINATION

Chlorine Contact Chamber

Size: 20.4m x 8.2m x 2.4m ($409.14 m^3$)
Retention: 22 min.

Chlorinator

One F & P 226.8 kg/d

OUTFALL

Avon River

SLUDGE HANDLING

Digestion System - Heated, two-stage

Type: Gas Mixed
Size: One 22.2 m dia. x 7.9m swd ($283.2 m^3$)

Primary Stage (inner)

Size: $1914.4 m^3$
Loading: 28.4 $kg/m^3 \cdot d$

Secondary Stage (outer ring)

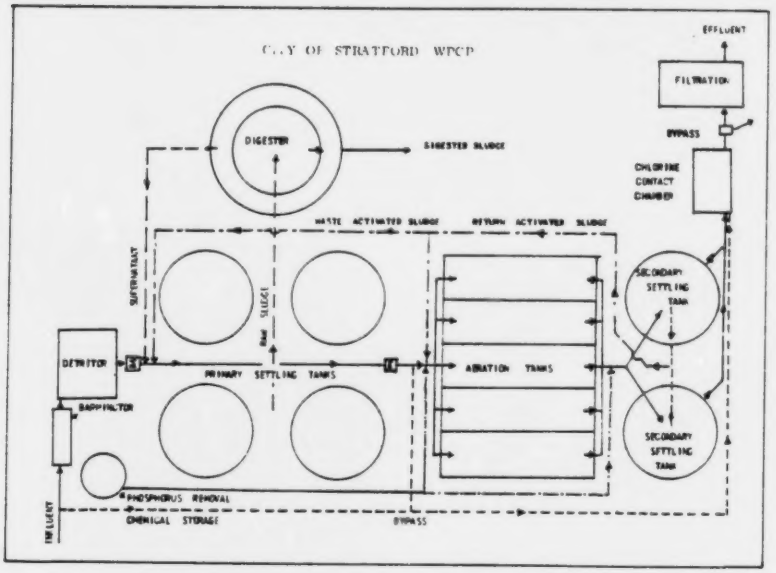
Size: $917.37 m^3$
Total Loading: 19.38 $kg/m^3 \cdot d$

TERTIARY TREATMENT

Rate: 36.4 $10^3 m^3/d$ (70.5 $m^3/m^2 \cdot d$
Type: Four, variable declining rate anthacit and sand filters
Size: (each) 4.0m x 7.9m

Phosphorus Removal

Size: $27.28 m^3$



DESIGN DATA - IMPERIAL

PROJECT City of Stratford WPCP

PROJECT NO. 2-0002-57

TREATMENT Activated Sludge

DESIGN FLOW 6.0 mgd

DESIGN POPULATION 30,000

BOD - Raw Sewage 140 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 95%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model B (36")

Grit Removal

Type: Dorr detritor
Size: One 20' x 20' x 1' (2500 gal)
Retention: 0.9 min

Primary Sedimentation

Type: Infilco
Size: Four 80' dia x 10½' swd (1.32 mil gal)
NOTE: Two used for storm flows only
Retention: 2.7 hr (2 cl)
Loading: Surface, 600 gal/ft^2/day
Weir, 12,000 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air; triple-pass
Size: Five 85' x 25' 8" (avg) x 13' (0.97 mil gal)
Retention: 3.9 hr

Diffusers

Type: Activated Sludge Ltd. Alundum Domes

Air Supply

Type: Roots-Connersville
Size: Three 1750 cim

Secondary Sedimentation

Type: Infilco
Size: Two 80' dia x 11' 3" swd (0.705 mil gal)
Retention: 2.7 hr
Loading: Surface, 600 gal/ft^2/day
Weir, 12,000 gal ft/day

CHLORINATION

Chlorine Contact Chamber

Size: 67' x 27' x 8' (90,000 gal)
Retention: 22 min

Chlorinator

One F & P 500 lb/day

OUTFALL

Avon River

SLUDGE HANDLING

Digestion System - Heated, two-stage

Type: Gas mixed
Size: One 73' dia x 26' swd (100,00 cu ft or 0.624 mil gal)

Primary Stage (inner)

Size: 67,600 cu ft
Loading: 2.8 lb/cu ft/mo

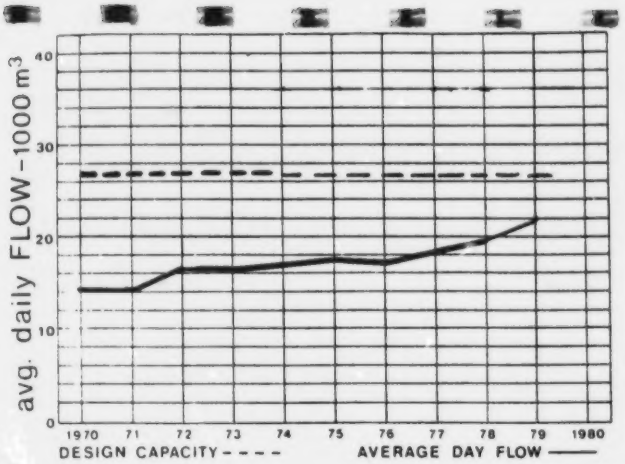
Secondary Stage (outer ring)

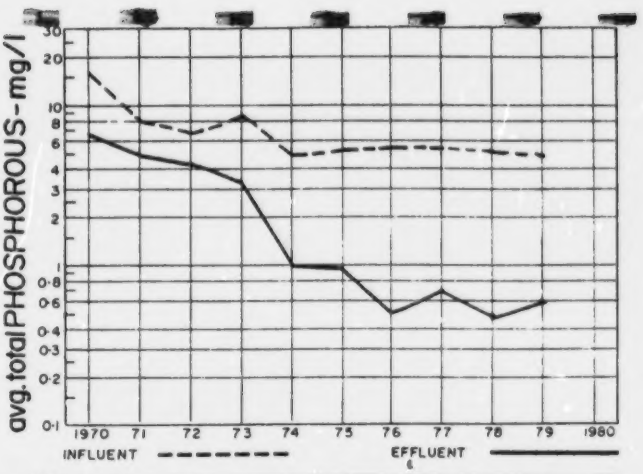
Size: 32,400 cu ft
Total Loading: 1.9 lb/cu ft/mo

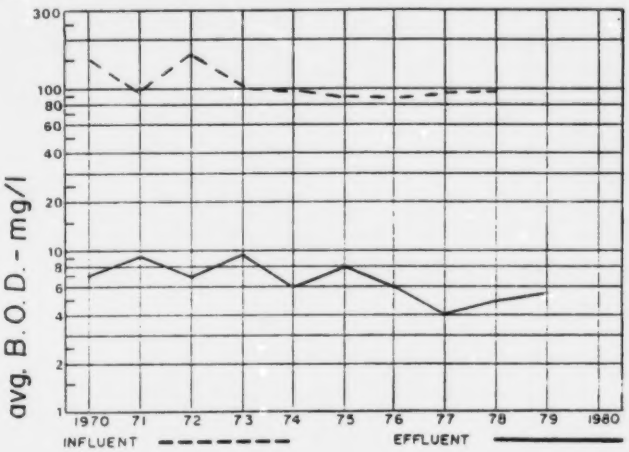
TERTIARY TREATMENT

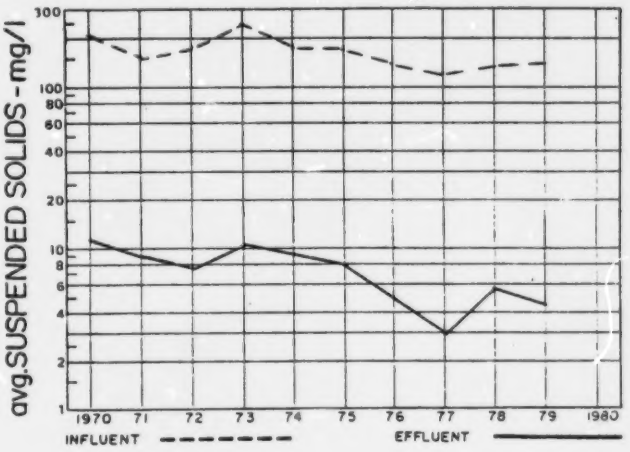
Rate: 1 MGD (5 USGPM / ft^2)
Type: Four, variable declining rate anthacit and sand filters
Size: (each) 13' x 26'

PHOSPHORUS REMOVAL









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000702 STRATFORD W P C P (TERTIARY)

MUNICIPALITY : STRATFORD
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EFFLUENT FILTRATION
CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 28,515
POPULATION SERVED : 28,517
PERCENT SERVED : 100.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 27.278 1000 M3 DESIGN BOD5 : 140.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	645.032	20.807	56.598	77.282	95.0	9.8	89	54.9	160.0	5.9	96	99.3	4.5	.7	84	2.451
FEB	517.971	18.499	39.459	77.282	124.0	8.4	93	59.8	171.0	5.4	96	85.7	5.9	1.1	81	2.486
MAR	1108.360	35.750	78.100	77.280	51.0	9.1	82	46.4	116.0	5.5	95	122.4	3.1	.9	70	2.438
APR	920.200	30.700	71.100	77.300	59.0	9.9	83	45.1	64.0	12.8	80	47.1	3.5	1.0	69	2.236
MAY	598.700	19.300	28.900	77.300	99.2	3.8	96	57.1	150.0	5.1	96	86.7	5.8	.6	88	3.083
JUN	577.700	19.300	24.800	77.300	92.0	3.8	95	50.9	161.0	3.6	97	90.9	5.2	.6	87	2.657
JUL	542.100	17.500	26.000	77.300	106.0	4.3	95	55.1	203.0	4.1	97	107.8	5.4	.4	91	2.678
AUG	537.800	17.300	22.100	77.300	113.0	3.2	97	59.0	249.0	2.8	98	132.4	5.5	.3	93	2.807
SEP	549.100	18.300	43.400	77.300	118.5	2.6	97	63.6	165.0	1.5	99	89.7	5.8	.3	94	3.064
OCT	529.600	17.100	25.200	50.000	112.0	2.0	98	58.2	177.0	3.5	98	91.8	6.4	.3	94	3.241
NOV	781.600	26.100	58.000	77.300	87.0	2.5	97	66.0	98.0	3.3	96	72.4	4.8	.6	85	3.275
DEC	801.200	25.800	73.000	77.300	81.0	5.5	93	60.4	123.0	.7	99	97.9	4.2	1.0	78	2.572
TOTAL	8109.363							677.1				1124.7				32.988
AVERAGE		22.205			94.8	5.4	94		152.9	4.5	97		5.0	.6	86	
MAXIMUM			78.100	77.300												
NO. OF SAMPLES					49	49			50	50			50	50		

Ministry of the Environment
Ontario

West Central Region

(2)

REGIONAL OFFICE

STONEY CREEK
140 Centennial Pkwy. N.
416-561-7410

DISTRICT OFFICES

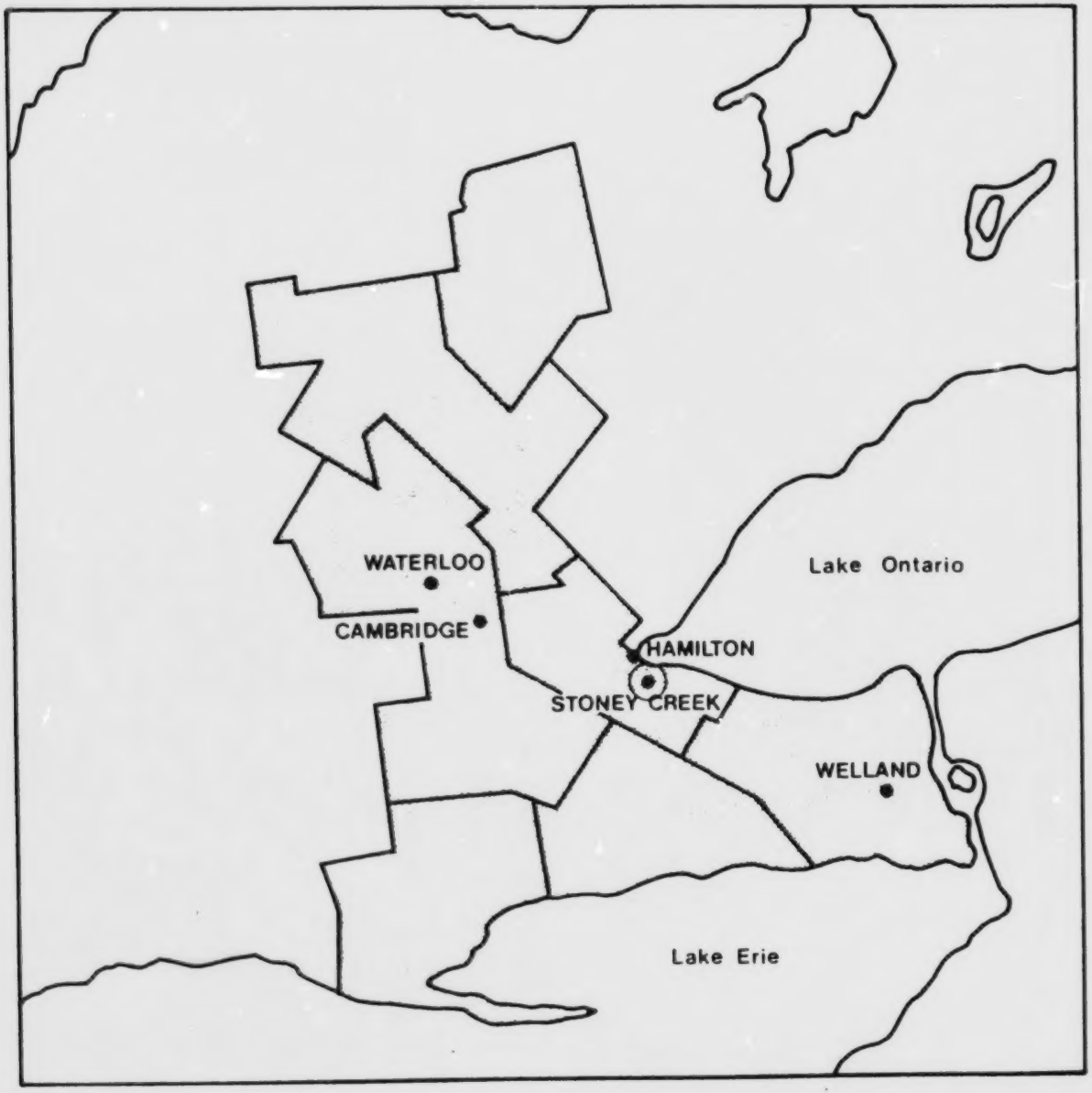
Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

West Central Region

Ministry of the Environment

Ontario



DESIGN DATA - METRIC

ORANGEVILLE

DESIGN DATA

PROJECT NO.: 1-0077-67

TREATMENT: Activated Sludge

DESIGN FLOW: 6.819 $10^3 m^3/d$

DESIGN POPULATION: 15,000

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 250 mg/l

LIFT PUMPS
Type: 4-Meyers Submersible
Size: 63.1 l/s at 11.8m TDH
78.9 l/s at 9.5m TDH

PRIMARY TREATMENT
Type: Worthington Comminutor

Grit Removal
Type: D.O.L. Detritor

Primary Sedimentation
Type: Spiraflow (peripheral feed)
Size: One 10.7m dia. x 3.7m swd
Volume: 327.31 m^3
Retention: 2.31 hr.
Loading: Surface, 38.13 $m^3/m^2 \cdot d$
Weir, 109.51 $m^3/m \cdot d$

Type: EIMCO
Size: 10.7m x 3.7m swd

SECONDARY TREATMENT

Aeration Tanks
Type: Diffused air; single-pass
Size: Four 19.2m x 64m x 3.7m
Volume: 900.11 m^3
Retention: 6.33 hr.
Diffusers: Dorr Inka

Air Supply
Type: Powlesland-Bailey fan
Size: Four 1337.3 l/s at 762mm wc

Secondary Sedimentation
Type: Dorr
Size: One 13.7m dia. x 2.8m swd
Volume: 442.33 m^3
Retention: 3.12 hrs.
Loading: Surface, 22.98 $m^3/m^2 \cdot d$
Weir, 86.72 $m^3/m \cdot d$

Type: EIMCO
Size: One 20.12m dia. x 3.05m swd

CHLORINATION
Type: Sodium Hypochloride
Size: 27.28 m^3 storage (Flow matched by BIF Diaphram Pumps)

Chlorine Contact Chamber
Size: One 7.31m x 3.05m x 2.74m
Volume: 70.0 m^3
Retention: 29.6 min.

TERTIARY TREATMENT
Type: Hardinge Automatic Backwash Filter
Size: 4.9m wide x 30.48m long
Peak Load Design: 20.48 $10^3 m^3/d$
Average Design: 6.82 $10^3 m^3/d$

Effluent Pumps
Type: 2-Peerless Hollow Shaft
Size: 236.6 l/s at 4.88 m TDH

Phosphate Removal
Size: 40.9 m^3 Alum Storage
Flow matched by BIF Diaphram Pumps

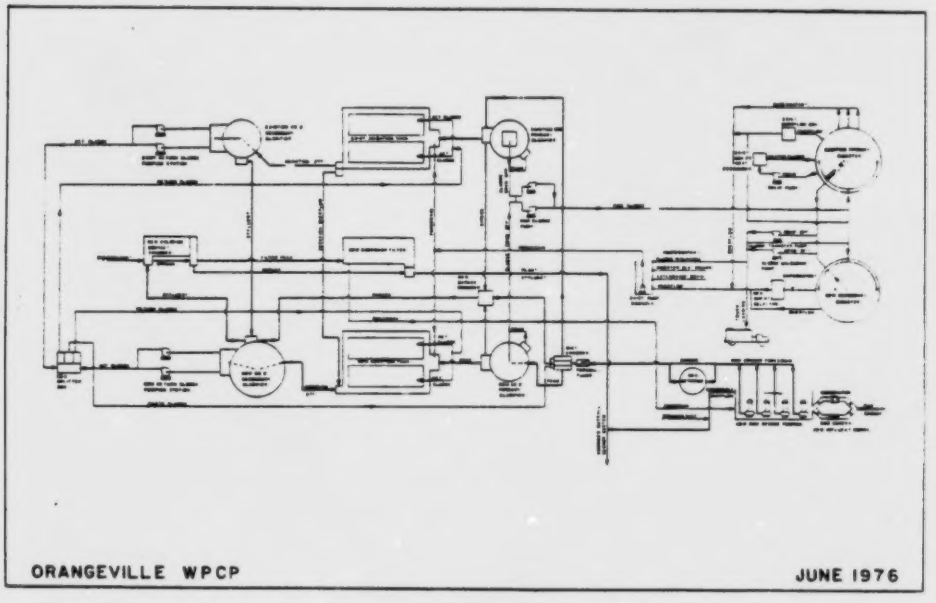
OUTFALL
- to Credit River

SLUDGE HANDLING

Digestion System - Two-Stage

Primary:
Type: Carter gas-mixed, floating cover
Size: One 13.7m dia. x 6.10m swd
Volume: 977.39 m^3
Loading: 15.3 $kg/m^3 \cdot d$

Secondary:
Type: Walker Process Gas Holding Cover
Size: 13.7m dia. x 6.1m swd



DESIGN DATA - IMPERIAL

ORANGEVILLE

DESIGN DATA

PROJECT NO. 1-0077-67

TREATMENT: Activated Sludge

DESIGN FLOW: 1.50 MIGD

DESIGN POPULATION: 15,000

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 250 mg/l

LIFT PUMPS
Type: 4 - Myers Submersible
Size: 833.11 Igpm at 39' TDH
1041.39 Igpm at 31' TDH

PRIMARY TREATMENT
Type: Worthington Comminutor

Grit Removal
Type: D.O.L. Detritor

Primary Sedimentation
Type: Spiraflow (peripheral feed)
Size: One 35' dia. x 12' swd
Volume: 72,000 gal.
Retention: 2.31 hr.
Loading: Surface, 780 gal/ ft^2/day
Weir, 7350 gal/ft./day

Type: EIMCO
Size: 35' x 12' swd

SECONDARY TREATMENT

Aeration Tanks
Type: Diffuser air; single-pas
Size: Four 63' x 21' x 12'
Volume: (198,000 gal.)
Retention: 6.33 hr.
Diffusers: Dorr Inka

Air Supply
Type: Powlesland-Bailey fan
Size: Four 3200 scfm at 30" wc

Secondary Sedimentation
Type: Dorr
Size: One 45' dia. x 9.17' swd
Volume: 9[illegible],300 gal.
Reten[illegible] hrs.
Load[illegible] [illegible]rface, 470 gal/ft^2/day
Weir, 5820 gal/ft/day

Type: EIMCO
Size: One 66' dia. x 10' swd

CHLORINATION
Type: Sodium Hypochloride
Size: 6000 gal. storage (Flow matched by BIF Diaphram Pumps)

Chlorine Contact Chamber
Size: One 24.0' x 10' x 9'
Volume: 15,400 gal.
Retention: 29.6 min.

TERTIARY TREATMENT
Type: Hardinge Automatic Backwash Filter
Size: 16' wide x 100' long
Peak Load Design: 4.5 MIGD
Average Design: 1.5 MIGD

Effluent Pumps
Type: 2-Peerless Hollow Shaft
Size: 3750 Us gpm at 16' TDH

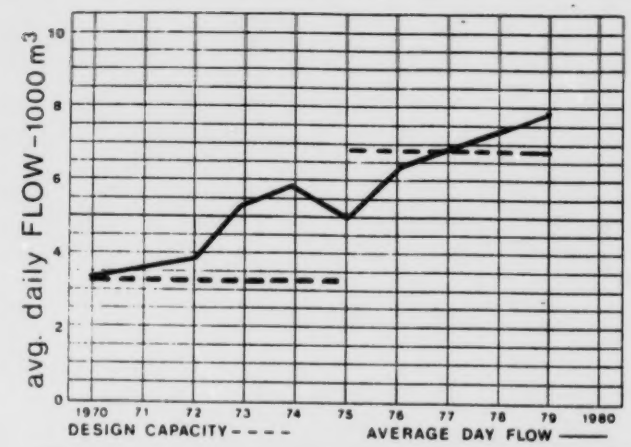
Phosphate Removal
Size: 9000 gal. Alum Storage
Flow matched by BIF Diaphram Pumps

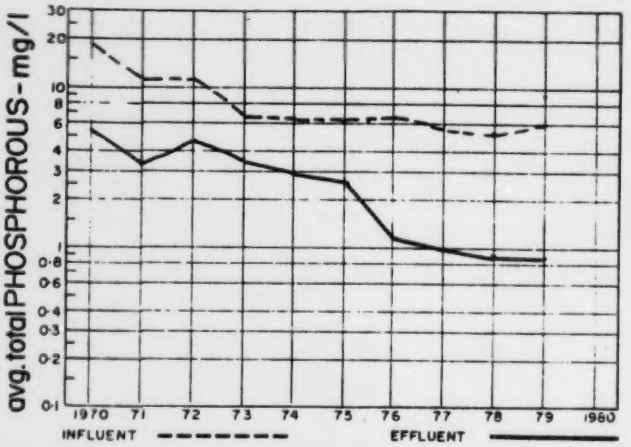
OUTFALL
- to Credit River

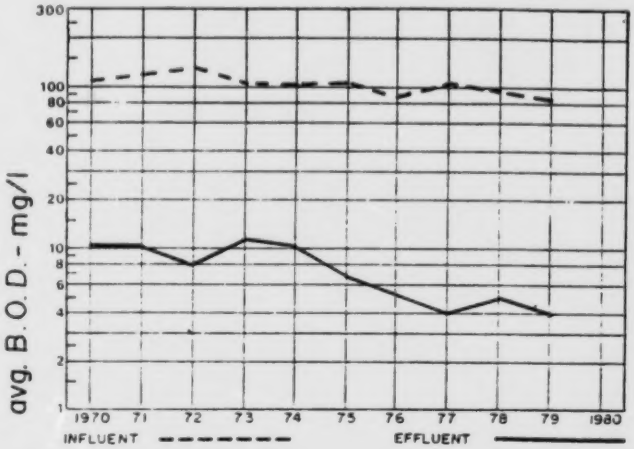
SLUDGE HANDLING

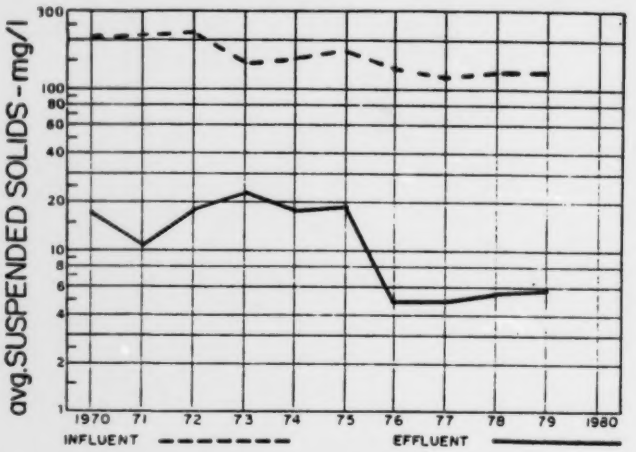
Digestion System - Two-Stage
Primary:
Type: Carter gas-mixed, floating cover
Size: One 45' dia. x 20' swd
Volume: 34,500 cu. ft. or 215,000 gal.
Loading: 1.5 lb./ cu. ft./mon.

Secondary:
Type: Walker Process Gas Holding Cover
Size: 45' Dia. x 20' swd









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER 110000542 ORANGEVILLE WPCP (TERTIARY)

MUNICIPALITY : ORANGEVILLE **
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EFFLUENT FILTRATION
CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 13,034
POPULATION SERVED : 14,000
PERCENT SERVED : 107.4

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 8.819 1000 M3 DESIGN BODS : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	190.432	6.143	8.269		110.0	7.5	93	19.5	138.0	7.1	94	24.9	6.8	1.1	83	1.085
FEB	166.024	5.929	7.023		107.0	12.5	88	15.6	183.0	7.3	96	29.1	7.6	1.9	75	.946
MAR	382.750	12.347	21.307		57.0	3.0	94	20.6	81.0	2.1	97	30.1	3.7	.4	89	1.263
APR	383.200	12.800	21.900		43.0	2.4	94	15.5	62.0	4.8	92	21.9	3.0	.5	80	.927
MAY	285.500	9.200	11.900		74.0	3.0	95	20.2	119.0	5.0	95	32.5	5.0	.9	81	1.159
JUN	214.600	7.150	8.700		90.0	7.0	92	17.8	129.0	4.5	96	26.7	6.8	.9	86	1.262
JUL	193.200	6.230	7.000		85.0	3.2	96	15.8	160.0	9.7	93	29.0	5.7	.8	85	.941
AUG	188.600	6.100	7.800		97.5	1.6	98	18.0	167.5	9.8	94	29.7	6.6	1.0	84	1.066
SEP	175.100	5.800	7.400		97.0	2.4	97	16.5	135.0	5.1	96	22.7	6.9	.8	88	1.075
OCT	199.300	6.400	7.900		87.0	2.5	97	16.8	135.0	5.5	95	25.8	6.8	.8	87	1.196
NOV	230.000	7.670	12.900		95.5	2.0	97	21.5	177.0	5.0	97	39.5	8.0	1.0	87	1.610
DEC	271.900	8.770	20.600		68.0	2.5	96	17.7	110.0	5.2	95	28.4	5.5	.9	83	1.259
TOTAL	2880.606							216.1				340.8				13.789
AVERAGE		7.878			84.2	4.1	95		133.0	5.9	95		6.0	.9	84	
MAXIMUM			21.900													
NO. OF SAMPLES					24	24			51	51			24	23		

DESIGN DATA - Metric

PROJECT: Simcoe

PROJECT NO: 1-0278-71

TREATMENT: Activated Sludge

DESIGN FLOW: 14 mm2 10^{3}m^3/d

Raw Sewage Pumping Station
Type: Two identical centrifugal vertical variable speed sewage pumps
Speed: 189.3 l/s at 16.8m TDH
Power: 47.7 kW 1200 RPM motors
Type: Two constant speed pumps
Speed: 126.1 l/s at 16.8 m TDH

Flow Measurement
Type: A meter chamber with a 304.8 mm diameter magnetic flow meter.

Grit removal
Type: Dorr Detritors
Size: Two 4.3m x 4.3m x 0.46 m

Screening
Type: Two 0.9m barminutors, model "C"

OLD PLANT

Primary Sedimentation
Size: 15.2m x 6.4m x 2.4m
Volume: 15,240 m^3 tank
Retention: 4.1 hours
Loading: Surface 29.23 m^3/m^2.d
Weir 447.00 m^3/m.d

Aeration Tanks
Type: One four pass diffused air unit
Size: Eight-3.7m x 15.2m x 2.4m
Volume: 1091.04 m^3
Retention: 9.6 hours
Air Supply: Two Roots-Connersville (@1.5 l/s units delivervina throuah holes in pipes and spargers

Secondary Sedimentation
Type: One Dorr
Size: 14.0m (nex) x 2.9m swd tank
Retention: 3.16 hours with 25 return sludge
Loading: Surface-17.60 m^3/m^2.d
Weir-82.99 m^3/m.d

NEW PLANT

Primary Sedimentation
Type: Four circular synhum fed units 13.7m dia. x 3.05 m swd with scum collector & sludge thickener hopper and mechanism.
Loading: Surface - 21.64 m^3/m^2.d
Weir - 87.99 m^3/m.d

Aeration Tanks
Size: Four tanks each 29.9m x 7.6m x 3.81m swd
Retention: 6.6 hrs
Blowers: Four-rated @ 2716 l/s Two-rated @ 2297 l/s for a low pressure aeration system

Secondary Sedimentation
Size: Two Dorr 13.7m dia. x
Retention: 3.4 hours
Loading: Surface - 21.51 m^3/m^2.d
Weir - 82.99 m^3/m.d
Tanks: Two 18.2 m x 18.2m square tanks.

Digestion

Primary Digester
Size: One 21.3m dia. x 7.6m swd
Rate: 0.928 kg/m^3.d for 3.5 sludge
Retention: 17.3 days

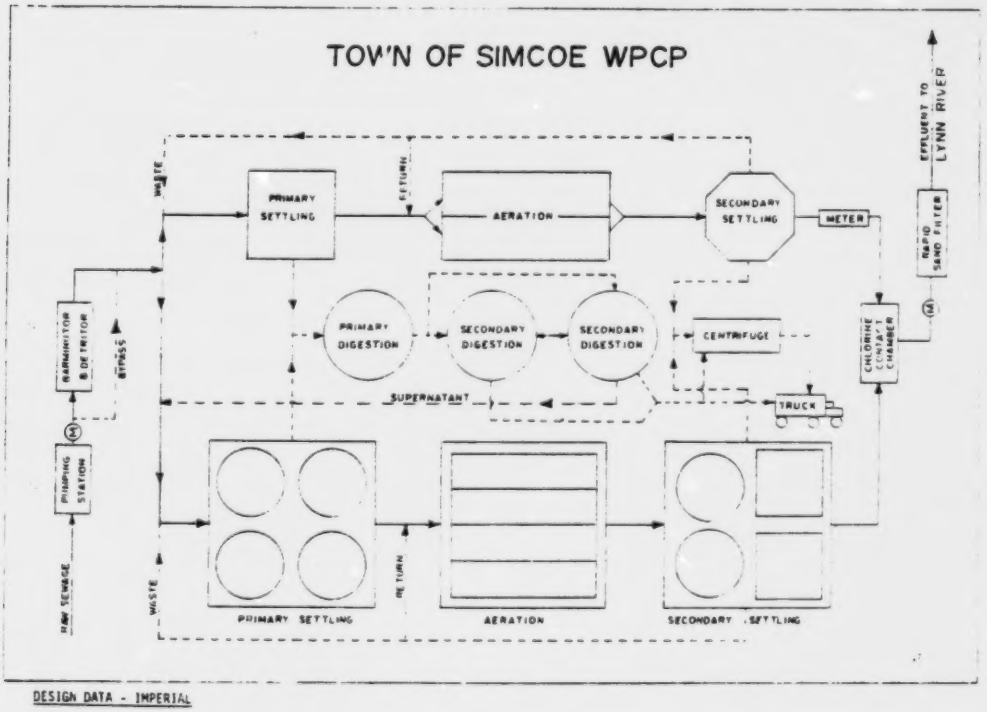
Secondary Digesters
Size: Two 15.2m dia. x 6.1m swd for 58 days storage capacity

Boiler-Centrifuge Building
Type: Two fire tube type broilers
Rate: 680 MBH and 840 MBH
Type: One Kruger 500 KDF centrifuge with sludge holding and chemical tanks.

Chlorination
Type: One chlorine contact chamber
Size: 12.8m x 12.1m x 2.6m swd
Retention: 33 min.
Type: One gas chlorinator (max capacity 907.2 kg/d with 226.8 kg/d rotameter

Effluents Polishing Filters
Type: One uncovered automatic backwash rapid sand filter (33.5m x 4.9m)
Rate: 0.009 l/s/m^2

Outfall Sewer
0.6m dia. sewer discharging to Lynn River.



DESIGN DATA - IMPERIAL

PROJECT: Simcoe
PROJECT NO. : 1-0278-71
TREATMENT : Activated Sludge
DESIGN FLOW : MGD 3.232
Old Plant 0.6 MIGD
New Plant 2.6 MIGD

RAW SEWAGE PUMPING STATION
Two identical centrifugal vertical variable speed sewage pumps each rated at 2500 IGPM at 55' TDH. Driven by two 60 HP 1200 RPM motors. Two constant speed pumps each rated at 1666 IGPM at 55' TDH.

FLOW MEASUREMENT
A meter chamber with a 12" diameter magnetic flow meter.

GRIT REMOVAL
Two 14'x14'x1.5' Dorr detritors.

SCREENING
Two 24 inch barminutors, model "C".

OLD PLANT

PRIMARY SEDIMENTATION
One 50'x20'x8' (50,000 gal.) tank
Retention: 4.3 hr.
Loading: Surface 600 gal/sq.ft/day
Weir 30,000 gal/ft/day

AERATION TANKS
One four pass diffused air unit.
Size: 8 -12'x50'x8' (240,000 gal.)
Retention: 9.6 hr.
Air supplied by two Roots-Connersville 1200 SCFM units delivering through holes in pipes and spargers.

SECONDARY SEDIMENTATION
One Dorr 45' (nex.)x9.5' SWD. tank
Retention: 3.16 hr. with 25' return sludge
Loading: Surface, 360 gal/sq.ft/day
Weir, 4150 gal/ft/day

NEW PLANT

PRIMARY SEDIMENTATION
Four 45' dia. x [illegible] fed units 45' diam. x [illegible]' with scum collector and sludge thickener hopper and mechanism.
Loading: Surface, 360 gal/sq.ft./day
Weir, 5570 gal/ft/day

AERATION TANKS
Four tanks each 98'x25'x12.5' SWD
Retention: 6.6 hrs.
Four blowers each rated at 6500 SCFM
Two blowers each rated at 5500 SCFM for a low pressure aeration system.

SECONDARY SEDIMENTATION
Two Dorr 45' diam.x
Retention: 3.4 hr.
Loading: Surface, 440 gal/sq.ft/day
Weir, 5570 gal/ft/day
Two 60'x60' square tanks

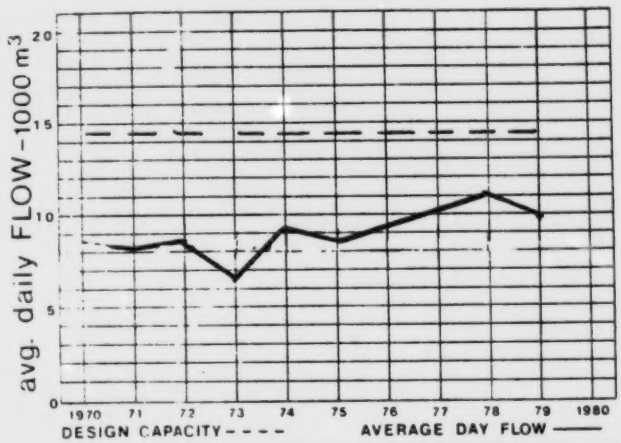
DIGESTION
One 70' diam. 25' SWD primary digester rated at 0.091 lb VSS/cu.ft/day, for 3.5% sludge with 17.3 days retention.
Two 50' diam. 20' SWD secondary digesters for 58 days storage capacity

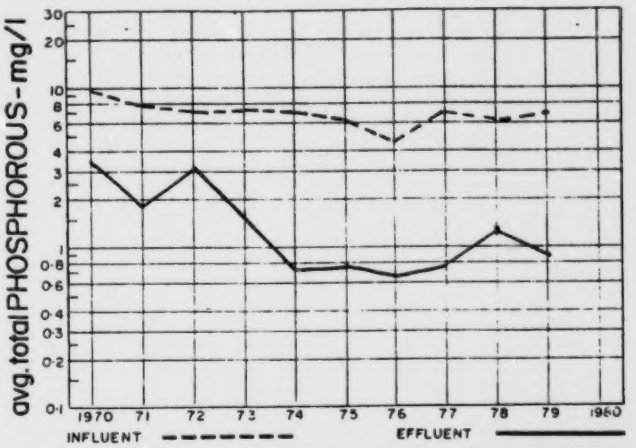
BOILER-CENTRIFUGE BUILDING
Two fire tube type boilers rated at 680 MBH and 840 MBH.
One Kruger 500 KDF centrifuge with sludge holding and chemical tanks.

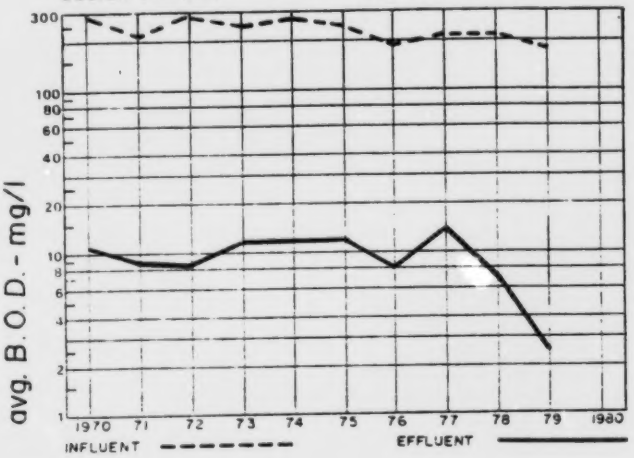
CHLORINATION
One chlorine contact chamber 42'x39.75'x8.5' SWD with 33 min. detention. One gas chlorinator (max. capacity 2000 lb/day) with 500 lb day rotameter.

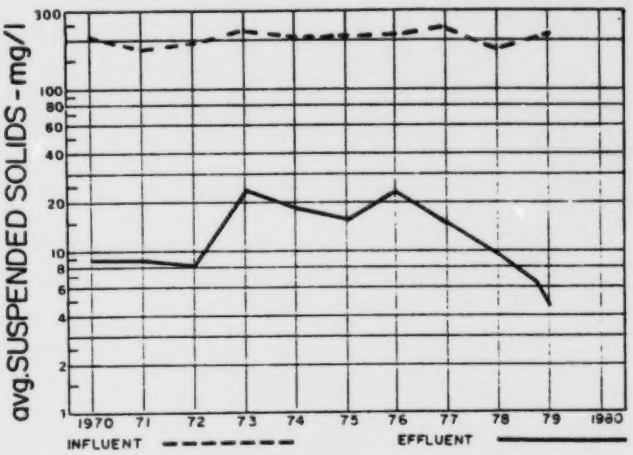
EFFLUENTS POLISHING FILTERS
One uncovered automatic backwash rapid sand filter (11'2"x16') rated at 1.34 IGPM/sq.ft.

OUTFALL SEWER
A 24" diam. sewer discharging to Lynn River.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000677 SIMCOE W P C P (TERTIARY)

MUNICIPALITY : SIMCOE **
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EFFLUENT FILTRATION
CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 14,093
POPULATION SERVED : 12,200
PERCENT SERVED : 86.5

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 14.882 1000 M3 DESIGN BOD5 : 220.0 MG/L DESIGN SUSP.SOLIDS : 230.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	330.700	10.659	13.100		220.0	3.4	98	71.6	200.0	11.1	94	62.4	8.2	.4	95	2.579
FEB	346.500	12.366	16.000		260.0	4.0	98	88.7	267.0	5.1	98	90.7	6.4	.2	96	2.148
MAR	348.014	11.226	17.009		235.0	2.0	99	81.0	242.0	7.2	97	81.7	9.3	.4	95	3.097
APR	200.129	6.671	8.380		140.0	2.8	98	27.4	221.3	5.1	97	43.2	4.9	.6	87	.861
MAY	244.967	7.902	12.826		155.0	1.8	98	37.5	214.6	4.4	97	51.4	11.9	.4	96	2.807
JUN	258.500	8.618	10.756		139.5	4.9	96	34.7	164.1	4.6	97	41.2	8.5	3.9	53	1.166
JUL	239.600	7.729	10.000		110.0	4.6	95	25.2	164.8	3.0	98	38.7	6.8	.9	85	1.411
AUG	267.758	8.637	12.817		92.0	3.6	96	23.6	155.0	3.4	97	40.5	6.3	.8	87	1.483
SEP	338.234	11.274	14.223		210.0	1.0	99	70.6	231.9	4.3	98	76.9	6.5	.5	92	2.053
OCT	364.370	11.754	13.640		221.7	2.9	98	79.7	235.0	3.9	98	84.2	8.5	1.0	87	2.729
NOV	344.153	11.472	13.241		207.5	3.1	98	70.3	229.9	3.1	98	78.0	6.6	.8	86	1.972
DEC	322.285	11.113	13.104		180.0	1.6	99	57.4	230.0	2.8	98	73.2	6.5	.9	85	1.792
TOTAL	3605.210							668.3				762.7				24.098
AVERAGE		9.952			180.8	2.9	98		212.9	4.8	97		7.5	.9	87	
MAXIMUM			17.009													
NO. OF SAMPLES					33	17			156	141			83	60		

WASTE STABILIZATION PONDS (LAGOONS)

WASTE STABILIZATION PONDS (LAGOONS)

Ministry of the Environment
Ontario

Southwestern Region
(1)

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Southwestern Region

(1)

Ministry of the Environment

Ontario

Waste Stabilization Pond

PROJECT : AYLMER

Cell Acreage : 17.7 + 20.5 + 16.0 + 17.7 Cell Area: 7.2 + 8.3 + 6.5 + 7.2 ha

Total Acreage : 71.9 Total hectares: 29.2

Commenced Operation 1961

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

Flow Measurement :

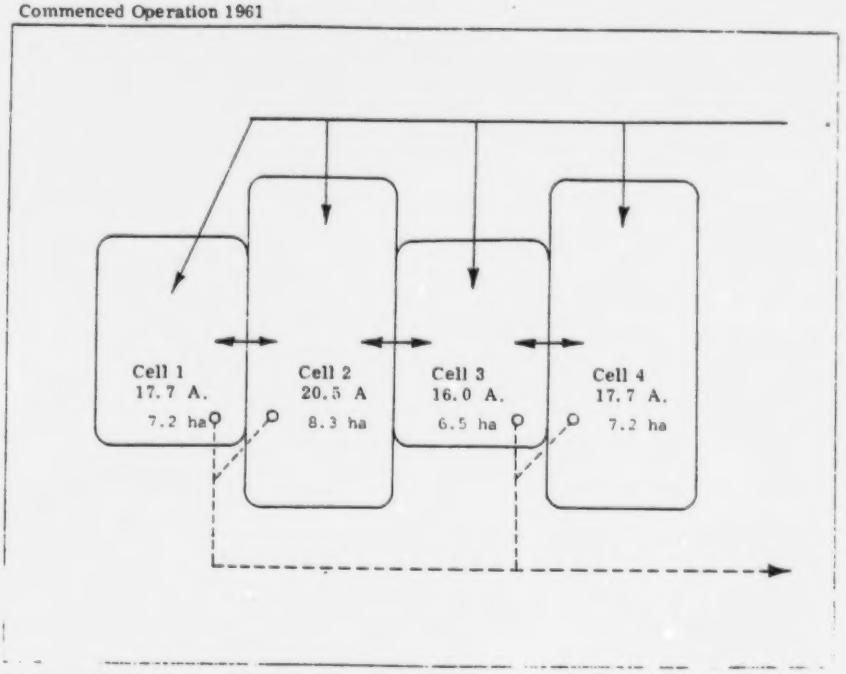
- □ Flow Meter
- □ Integrator
- □ Pump Timer

(N/A)
NO METER

Pumping Station

Pump 1 : 1440 I gpm 109.0 l/s
Pump 2 : 1440 I gpm 109.0 l/s

Total Cap : N/A



Significant Industries : Dairy Tabalo

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110000891 AYLMER LAGOON

MUNICIPALITY AYLMER
REGION 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION 5,156
POPULATION SERVED 5,213
PERCENT SERVED 101.1

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.454 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	90.338	2.914	6.092		242.0	16.5	93		343.7	16.8	95		22.3	5.8	73	
FEB	89.851	3.209	10.242		116.5	30.0	74		96.5	15.0	84		9.8	6.7	31	
MAR	148.026	4.807	12.001		117.0	24.0	79		123.0	24.0	80		12.2	4.6	62	
APR	203.300	6.777	10.300		106.0	20.9	80		96.0	55.9	41		7.3	1.8	75	
MAY	128.900	4.158	6.200		72.0	16.9	76		75.0	20.4	72		9.5	1.1	88	
JUN	92.000	3.067	4.200		127.5				110.0				13.2			
JUL	79.400	2.561	3.700		168.0	20.5	87		117.0	13.5	88		13.5	3.0	77	
AUG	89.900	2.900	3.800		101.0	11.3	88		108.5	13.0	87		10.5	3.1	70	
SEP	98.100	3.270	5.200		111.0	10.7	90		77.0	9.3	87		12.2	4.2	64	
OCT	104.300	3.365	4.300		172.5	10.8	93		128.0	21.0	83		14.5	2.8	80	
NOV	174.200	5.807	12.300		0				62.5				6.5			
DEC	*	*	14.100		206.5				56.5							
TOTAL	1298.315							1,7[illegible]				1[illegible]				1[illegible]
AVERAGE		3.894			139.3	17.9	87		115.9	20.9	81		11.9	3.6	69	
MAXIMUM			14.100													
NO. OF SAMPLES					24	55			25	55			24	42		

Waste Stabilization Pond

PROJECT : BELMONT

Cell Acreage : 8.1 + 8.1

Cell area : 3.3 + 3.3 ha

Total Acreage : 16.2

Total hectares : 6.6

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

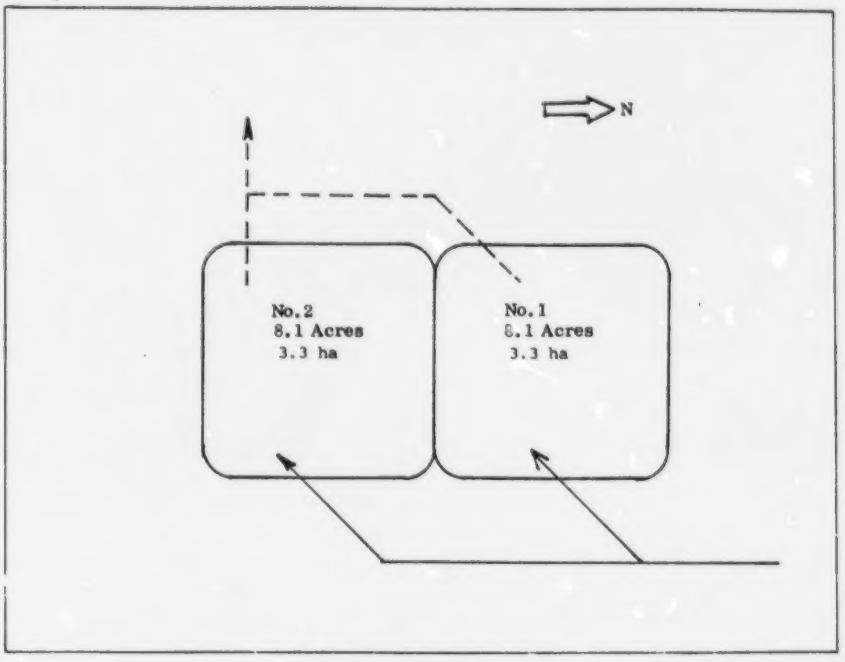
- ■ Batch
- ☐ Continuous
- ☐ None

Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 344 lgpm 26.0 l/s
Pump 2 : 100 lgpm 7.6 l/s
(Washburn St.)
Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002032 BELMONT LAGOON

MUNICIPALITY : BELMONT
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 744
POPULATION SERVED : 770
PERCENT SERVED : 103.4

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.583 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	5.946	.192	.527		47.3				58.7				4.8			
FEB	5.819	.208	.505		82.0				44.5				5.9			
MAR	12.537	.404	1.068		27.0				30.8				2.1			
APR	16.400	.547	2.200		136.0	17.3	87		113.0	18.3	83		8.2	1.5	81	
MAY	8.500	.274	1.300		77.0	25.8	66		43.5	12.0	72		9.0	1.4	84	
JUN	4.900	.163	.200		170.0				90.0				10.3			
JUL	4.300	139	.200		192.5				107.0				10.8			
AUG	5.700	.184	.300		188.0				145.0				9.6			
SEP	4.800	.160	.200		103.5				71.0				7.4			
OCT	6.600	.213	.700		175.0				86.5				9.4			
NOV	11.000	.367	.900		31.0	3.6	88		18.5	3.7	80		2.7	.2	91	
DEC	10.600	.340	1.100		27.6				61.5				6.8			
TOTAL	97 102							8.4				5.9				0.79
AVERAGE		.266			104.7	15.5	85		72.5	11.3	84		7.2	1.0	85	
MAXIMUM			2.200													
NO. OF SAMPLES					25	14			26	13			28	13		

Waste Stabilization Pond

PROJECT : CHESLEY

Cell Acreage : 6 + 5 + 6

Total Acreage : 17.0

Cell area : 2.4 + 2.0 + 2.4 ha

Total hectares: 6.8

Commenced Operation : Oct. 1963

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : 1 & 2 parallel series to #3

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

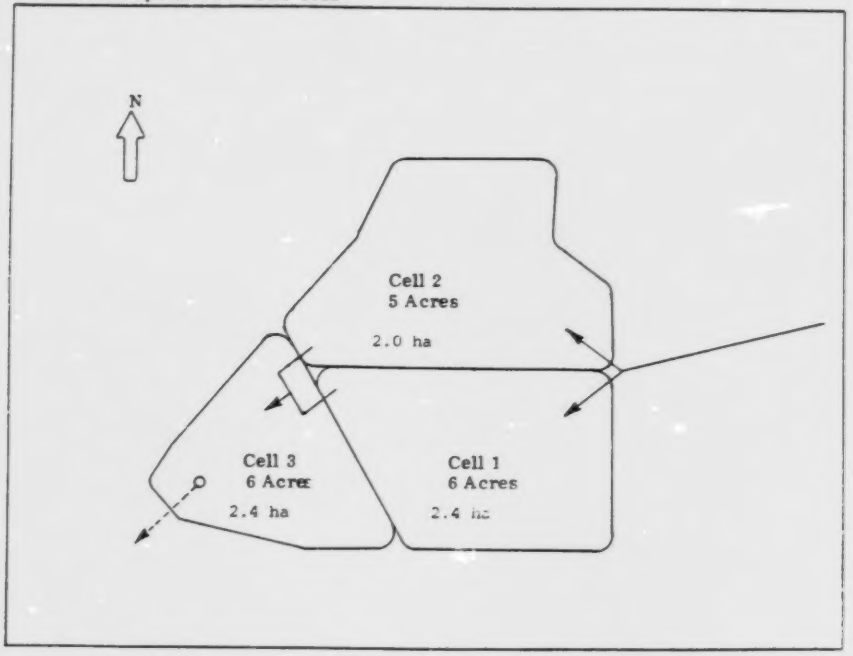
Flow Measurement :

- ☐ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : N/A
Pump 2 : N/A

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000105 CHESLEY LAGOON — MUNICIPALITY CHESLEY (IC-01) — REGION 01 SOUTHWESTERN

TREATMENT FACILITY CONVENTIONAL LAGOON CONTINOUS — * DATA NOT AVAILABLE — CURRENT POPULATION 1,859 — POPULATION SERVED 1,818 — PERCENT SERVED 97.7

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.809 1000 M3 DESIGN BODS : MG/L DESIGN SUSP SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	45.405	1.465			*	*			*	*			*	*		
FEB	30.531	1.090			84.0	27.0	67	1.7	87.0	11.0	87	2.3	4.3	3.2	25	.034
MAR	*	*			*	*			*	*			*	*		
APR	42.510	1.417			30.0	10.0	66	.8	72.0	11.0	84	2.5	2.2	.7	64	.060
MAY	32.300	1.042			74.0	3.4	95	2.2	76.0	.5	99	2.4	4.6	1.9	57	.085
JUN	35.993	1.200			100.0	2.6	97	3.5	97.0	8.0	91	3.2	5.8	1.3	77	.161
JUL	36.120	1.168			185.0	6.0	96	5.7	154.0	8.0	94	5.2	8.8	2.2	74	.237
AUG	40.320	1.301			130.0	6.4	95	4.9	118.0	1.5	98	4.6	6.8	3.2	52	.145
SEP	42.337	1.411			72.0	3.8	94	2.8	47.0	1.0	97	1.9	4.8	1.8	65	.133
OCT	72.241	2.330			84.0	3.8	94	4.3	45.0	1.0	97	3.1	3.2	.5	82	.191
NOV	52.086	1.736			40.2	2.0	95	1.9	87.0	2.5	97	4.4	2.2	.6	69	.079
DEC	50.900	1.642			48.0	10.0	79	1.9	38.0	6.0	84	1.8	2.1	2.1	-	-
TOTAL	480.743							30.2				31.6				1.125
AVERAGE		1.437			80.7	7.5	90		82.1	5.0	93		4.4	1.7	60	
MAXIMUM																
NO. OF SAMPLES					10	10			10	10			10	10		

Waste Stabilization Pond

PROJECT : (MITCHELL'S BAY)
DOVER TWP.

Cell Acreage : 5.0 +5.0

Cell area : 2.0 + 2.0 ha

Total Acreage : 10.0

Total hectares: 4.0

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : Series-parallel

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other : Total Retention

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

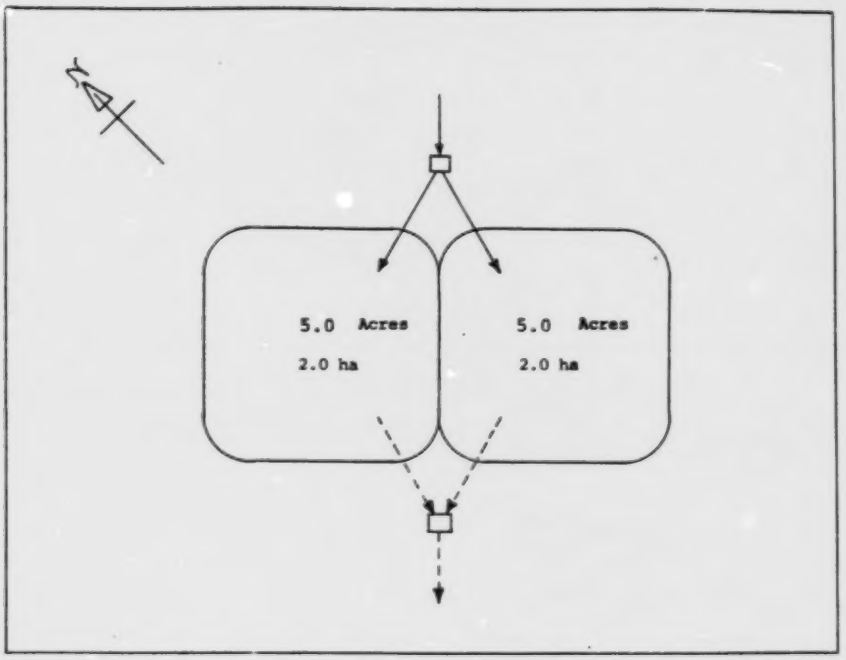
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002087 MITCHELL'S BAY LAGOON NO DISCHARGE IN 79

MUNICIPALITY : DOVER (MITCHELL'S BAY)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON ANNUAL COMPLETE RETENTION

CURRENT POPULATION : 4,351
POPULATION SERVED : 130
PERCENT SERVED : 2.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.104 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	1.909	.062														
FEB	2.014	.078			100.0				90.0				6.4			
MAR	2.409	.078			44.0				52.0				2.3			
APR	7.625	.254														
MAY	3.119	.100			90.0				75.0				8.2			
JUN	3.528	.117			116.0				92.0				9.5			
JUL	3.628	.117			98.0				107.0				7.7			
AUG	3.201	.103			123.0				68.0				8.7			
SEP	2.691	.089														
OCT	1.882	.061			72.0				60.0				6.0			
NOV	2.736	.091														
DEC	2.633	.085														
TOTAL	37.375															
AVERAGE		.103			91.7				77.7				6.9			
MAXIMUM																
NO. OF SAMPLES					7				7				7			

Waste Stabilization Pond

PROJECT : DUNDALK

Cell Acreage : 8 + 8

Cell area : 3.2 + 3.2 ha

Total Acreage : 16

Total hectares: 6.4

Commenced Operation : Dec. 1973

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

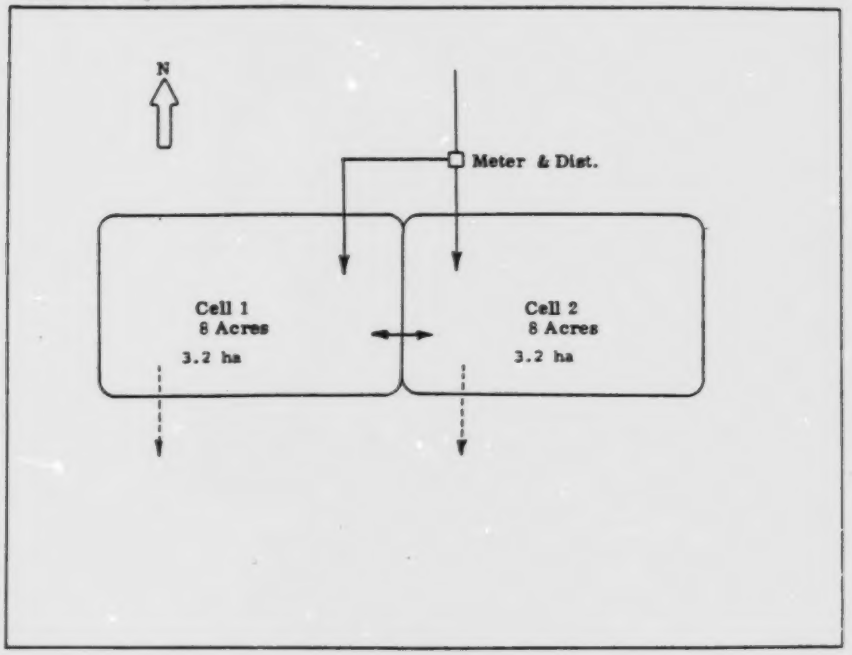
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 : (GRAVITY FLOW)

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM, — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001471 DUNDALK LAGOON

MUNICIPALITY : DUNDALK
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 1,168
POPULATION SERVED : 1,128
PERCENT SERVED : 96.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.850 1000 M3 DESIGN BOD5 : 190.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	19.225	.620			34.0				59.0				2.7			
FEB	12.533	.447														
MAR	46.619	1.504			24.0				35.0				2.4			
APR	41.220	1.374			42.0				54.5				2.4			
MAY	25.080	.809			*	8.5			*	18.0			*	.3		
JUN	14.630	.488			72.0				87.0				4.5			
JUL	12.303	.397														
AUG	12.903	.416			86.0				122.0				5.4			
SEP	13.990	.466														
OCT	20.350	.656			76.0				76.0				6.5			
NOV	36.700	.890			56.0	9.1	83		32.0	19.9	37		3.8	1.0	72	
DEC	31.330	1.010			*	8.4			*	10.5			*	1.1		
TOTAL	276.873							13.0				12.7				0.850
AVERAGE		.756			55.7	8.6	84		62.2	16.1	74		3.9	.8	79	
MAXIMUM																
NO. OF SAMPLES					9	30			9	30			9	30		

Waste Stabilization Pond

PROJECT : DUTTON

Cell Acreage : 10

Cell area: 4.0 ha

Total Acreage : 10

Total hectares : 4.0

Commenced Operation : Nov. 1972

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

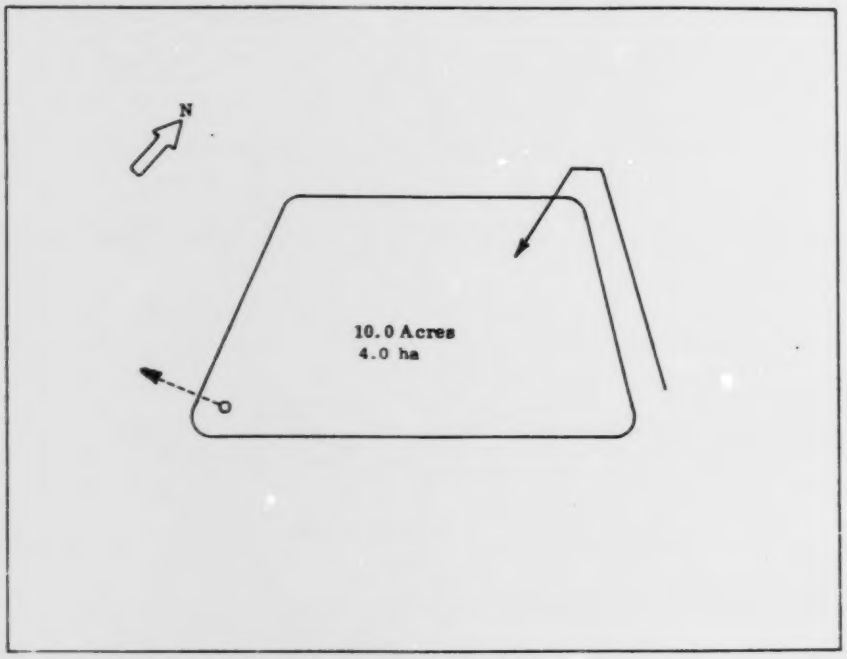
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 350 I gpm 26.5 l/s
Pump 2 : 350 I gpm 26.5 l/s

Total Cap : 350 I gpm 26.5 l/s



Signifigant Industries: Laundromat, Creamery

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001286 DUTTON LAGOON

MUNICIPALITY : DUTTON
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,043
POPULATION SERVED : 1,090
PERCENT SERVED : 104.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.318 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	11.247	.363	.830		198.0				169.0				9.6			
FEB	8.502	.307	.377													
MAR	12.324	.398	.488		175.0				147.0				9.2			
APR	11.988	.400	.448		145.0				117.0				9.6			
MAY	14.742	.476	.510	.555	160.0	13.6	91		79.0	23.1	70		10.2	.6	93	
JUN	9.428	.314	.358		155.0				103.0				9.3			
JUL	9.959	.321	.350		122.0				90.0				6.9			
AUG	10.292	.332	.358		32.0				30.0				3.1			
SEP	17.386	.580	1.099		230.0				211.0				8.4			
OCT	10.431	.337	.534		150.0				85.0				11.7			
NOV	9.845	.328	.382	43.189	132.0	11.7	91		96.0	14.3	85		8.7	.8	90	
DEC	20.908	.675	1.513		136.0								8.8			
TOTAL	147.142			43.734				20.0				13.8				1.162
AVERAGE		.403			148.6	12.6	91		112.7	18.7	83		8.6	.7	91	
MAXIMUM			1.513	43.189												
NO. OF SAMPLES					12	13			11	13			12	13		

340

Waste Stabilization Pond

PROJECT : EAST ZORRA - TAVISTOCK TWP. (TAVISTOCK)

Cell Acreage : 15.0 + 17.0 Cell area: 6.1 + 6.9 ha

Total Acreage : 32.0 Total hectares: 13.0

Commenced Operation : Nov. 1962

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

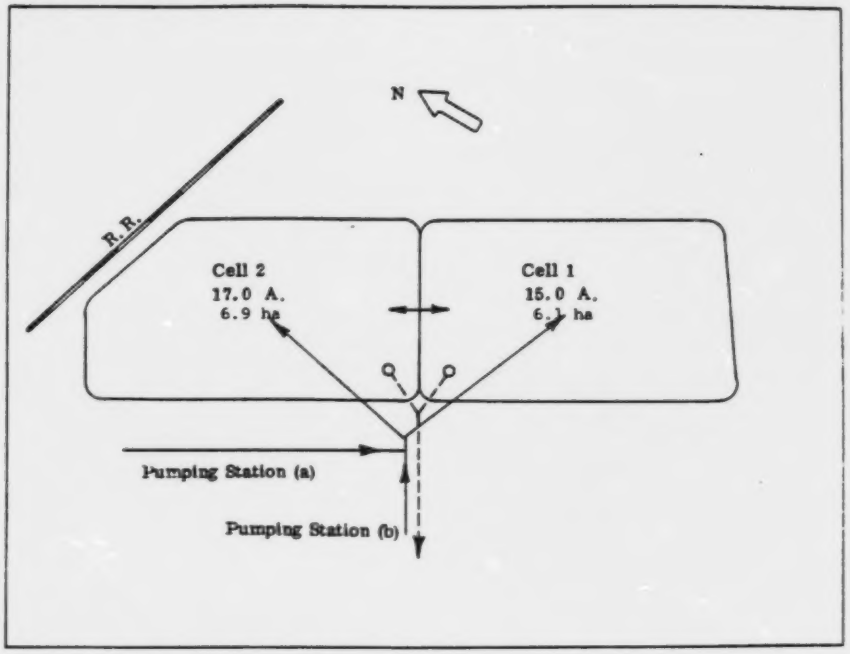
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Stations:

a) Pump 1: 417 Igpm 31.6 l/s
2: 417 Igpm 31.6 l/s
b) Pump 1: 417 Igpm 31.6 l/s
2: 417 Igpm 31.6 l/s

Total Cap: N/A



Significant Industries : Textile Mfg.

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000720 TAVISTOCK LAGOON

MUNICIPALITY : EAST ZORRA-TAVISTOCK
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 7,148
POPULATION SERVED : 1,779
PERCENT SERVED : 24.8

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.772 1000 M3 DESIGN BOD5 : 320.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	26.885	.867	3.414		363.0				196.0				15.7			
FEB	18.839	.673	.836		343.0				191.0				18.6	6.0	67	
MAR	45.910	1.481	7.019		*				187.0				13.0			
APR	42.350	1.410	7.540		159.0	8.7	94		72.0	6.9	90		7.2	.5	91	
MAY	28.270	.911	2.630		313.0	21.7	93		183.0	58.8	67		10.3	1.0	89	
JUN	*	*														
JUL	*	*														
AUG	*	*														
SEP	20.190	.670	1.150		620.0				330.0				11.7			
OCT	31.260	.890	.790		427.0				725.0				34.4			
NOV	32.780	1.090	2.340		405.0	15.9	96		287.0	28.9	89		11.3	.9	91	
DEC	35.640	1.150	5.170		394.0	22.5	94		129.0	33.8	73		9.8	1.7	82	
TOTAL	272.124							98.1				40.7				0.382
AVERAGE		.994			378.0	17.2	95		255.5	32.1	87		14.6	2.0	85	
MAXIMUM			7.540													
NO. OF SAMPLES					10	39			12	39			12	40		

Waste Stabilization Pond

PROJECT : ENNISKILLEN TWP (OIL CITY)

Cell Acreage : 5.4 Cell area: 2.2 ha

Total Acreage : 5.4 Total hectares: 2.2

Commenced Operation : May 1975

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

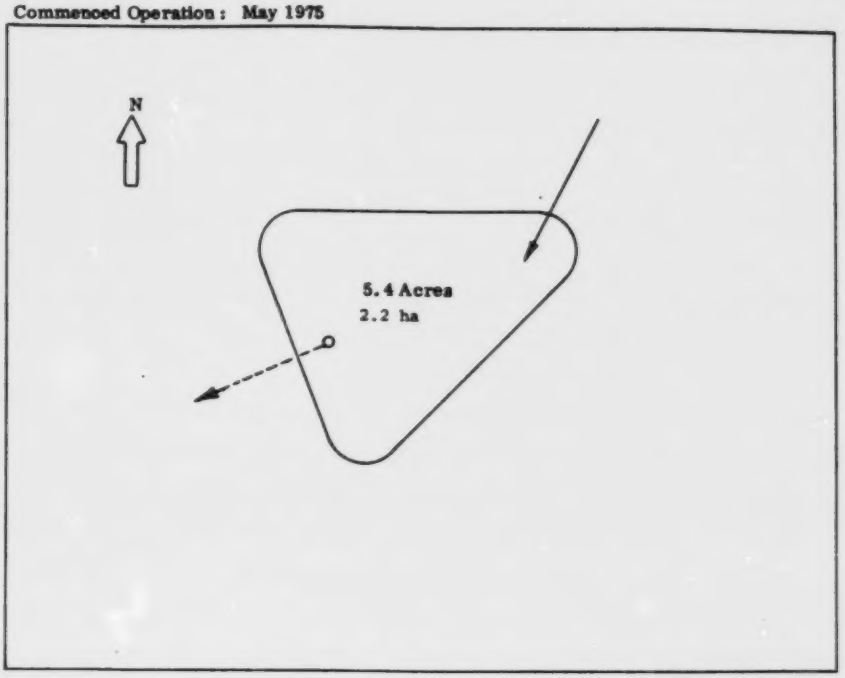
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 83 I gpm 6.2 l/s
Pump 2 : 83 I gpm 6.2 l/s

Total Cap : N./A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001738 OIL CITY LAGOON

MUNICIPALITY : ENNISKILLEN OIL CITY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 3,440
POPULATION SERVED : 300
PERCENT SERVED : 8.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.168 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	1.581	.051	.118		205.0	14.0	93		112.0	22.0	80		13.3	3.7	72	
FEB	1.418	.051	.173		220.0				126.0				10.6			
MAR	2.196	.071	.241		40.0	10.0	75		101.0	24.0	76		3.7	.6	83	
APR	2.541	.084	.400		60.0	41.0	31		70.0	82.0	-	-	5.1	3.2	37	.005
MAY	1.622	.052	.081		*				*				*			
JUN	1.418	.047	.059		*				*				*			
JUL	1.377	.044	.081		*				*				*			
AUG	1.359	.043	.054		*				*				*			
SEP	1.322	.044	.068		*				*				*			
OCT	1.352	.043	.113		*				*				*			
NOV	1.654	.055	.154		*				*				*			
DEC	1.986	.064	.231		*				*				*			
TOTAL	19.826							2.8				1.0				0.109
AVERAGE		.054			131.2	21.8	83		102.2	42.8	58		8.1	2.9	89	
MAXIMUM			.400													
NO. OF SAMPLES					4	3			4	3			4	3		

Waste Stabilization Pond

PROJECT : ESSEX (North-East)

Cell Acreage : 12 + 12 Cell area : 4.9 + 4.9 ha

Total Acreage : 24 Total hectares: 9.8

Commenced Operation : Approx. 1963/64

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

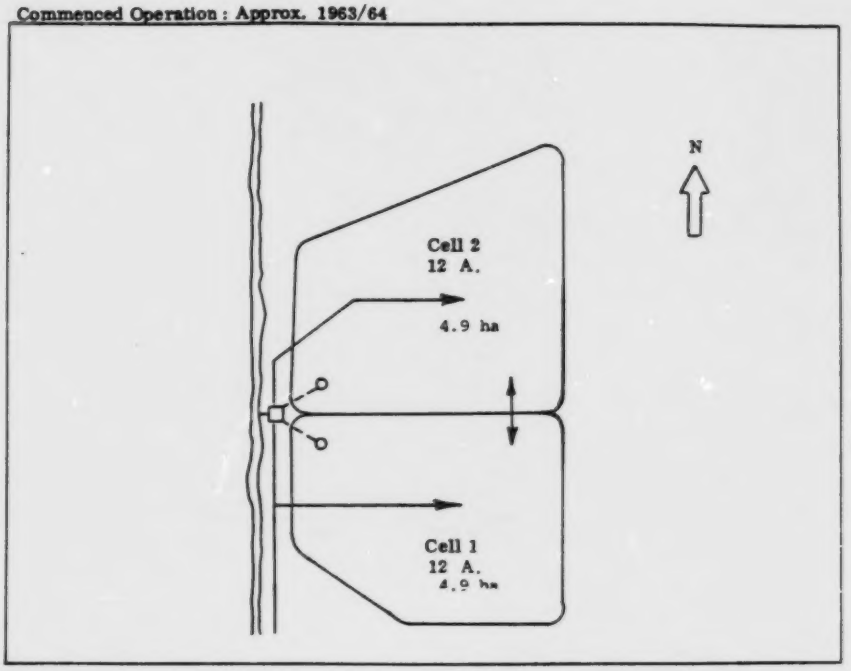
Flow Measurement :

- ☐ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 1000 gpm 75.7 l/s
Pump 2 : 1000 gpm 75.7 l/s

Total Cap : 1000 gpm
75.7 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000203 ESSEX LAGOON N.E. SPRING DISCHARGE MUNICIPALITY : ESSEX (N.E.) AD
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON
PHOSPHORUS REMOVAL

CURRENT POPULATION : 6,259
POPULATION SERVED : 2,300
PERCENT SERVED : 36.7

* DATA NOT AVAILABLE

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.091 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				><-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	19.698	.635	2.278													
FEB	15.993	.571	1.223													
MAR	24.798	.800	1.864													
APR	11.776	.392	.988	11.776	88.0	7.6	88		31.0	51.0	-		6.7	.4	94	
MAY	13.112	.423	1.105	18.102	*	13.8			*	103.0			*	3.0		
JUN	15.652	.522	1.300		36.0				23.0				4.0			
JUL	12.478	.402	.783		34.0				38.0				5.3			
AUG	17.615	.568	2.209		68.0				29.0				6.5			
SEP	15.583	.519	2.341		128.0				822.0				4.6			
OCT	17.053	.569	1.138		44.5				38.5				4.7			
NOV	29.831	.979	3.196													
DEC	34.603	1.116	4.714													
TOTAL	228.792			29.878				11.0				19.8				0.960
AVERAGE		.625			63.0	10.7	83		183.5	77.0	52		5.3	1.7	67	
MAXIMUM			4.714	18.102												
NO. OF SAMPLES					7	5			7	5			7	5		

Waste Stabilization Pond

PROJECT : ESSEX (South-West)

Cell Acreage : 12 + 12 + 12 Cell area : 4.9 + 4.9 + 4.9 ha

Total Acreage : 36 Total hectares : 14.7

Commenced Operation : July 1972

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

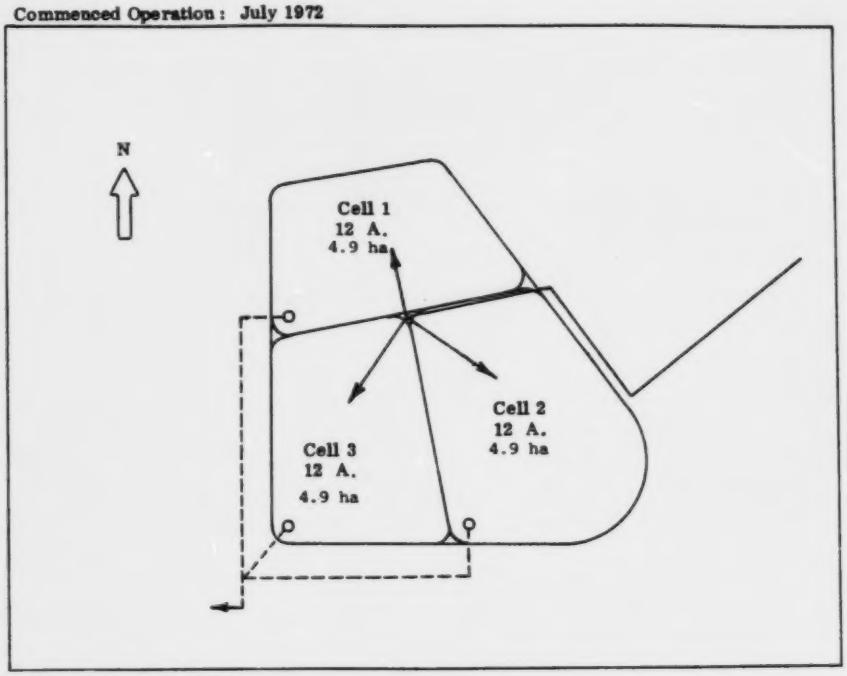
Flow Measurement :

- □ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 1200 I gpm 90.8 l/s
Pump 2 : 1200 I gpm 90.8 l/s

Total Cap : 1200 I gpm
90.8 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000837 ESSEX LAGOON S.W. (P REN CELL 1 APR 30)

MUNICIPALITY : ESSEX (S.W.) AD
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON ANNUAL
PHOSPHORUS REMOVAL

CURRENT POPULATION : 6,259
POPULATION SERVED : 3,900
PERCENT SERVED : 62.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.638 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	48.342	1.959	4.073													
FEB	38.323	1.369	6.210													
MAR	43.364	1.399	3.132													
APR	50.515	1.683	5.041	50.515	72.0	15.3	78		38.0	23.3	38		7.3	.5	93	
MAY	38.973	1.257	3.755	267.800		14.5				33.4				1.0		
JUN	37.391	1.246	2.773		134.0				38.0				8.3			
JUL	36.740	1.185	4.427		94.0				61.0				8.9			
AUG	27.889	.899	2.027		98.0				50.0				7.3			
SEP	32.894	1.096	5.105		140.0				46.0				7.8			
OCT	49.061	1.582		61.100	100.0	5.8	94		72.0	21.2	70		7.0	.5	91	
NOV	67.354	2.245		42.900		3.8				9.1				.5		
DEC	63.426	2.046														
TOTAL	534.272			422.315				51.3				15.3				3.419
AVERAGE		1.64			106.0	9.8	90		50.5	21.7	56		7.0	.6	90	
MAXIMUM			6.210	267.800												
NO. OF SAMPLES					7	10			7	10			7	10		

Waste Stabilization Pond

PROJECT : FOREST

Cell Acreage : 12.6 + 14.0 + 13.4 *Cell area: 5.1 + 5.7 + 5.4 ha*

Total Acreage : 40 *Total hectares : 16.2*

Commenced Operation : Dec. 1972

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

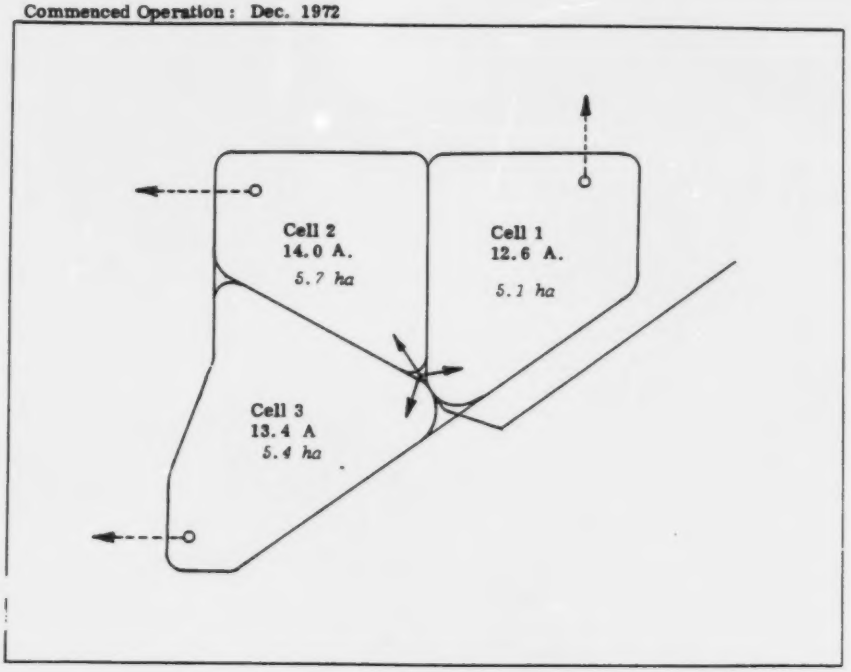
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 620 I gpm 46.9 l/s
Pump 2 : 620 I gpm 46.9 l/s

Total Cap : 775 I gpm
58.7 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001346 FOREST LAGOON

MUNICIPALITY : FOREST
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 2,679
POPULATION SERVED : 2,500
PERCENT SERVED : 93.3

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1,383 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	20.471	.680	1.232		*				*				*			
FEB	17.984	.642	1.055		*				*				*			
MAR	24.780	.799	1.273		*				*				*			
APR	30.744	1.024	2.586		*				*				*			
MAY	24.386	.786	1.150		*				*				*			
JUN	*	*			*				*				*			
JUL	21.002	.677	.963		*				*				*			
AUG	19.847	.640	.788		*				*				*			
SEP	18.886	.629	.786		*				*				*			
OCT	18.647	.601	.709		*				*				*			
NOV	19.916	.663	.923		*				*				*			
DEC	19.694	.634	1.509		*				*				*			
TOTAL	236.329															
AVERAGE		.705														
MAXIMUM			2.586													
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : GLENCOE

Cell Acreage : 14.0 + 14.0

Total Acreage : 28.0

Cell area : 5.7 + 5.7 ha

Total hectares : 11.4

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal: YES

- ☐ Batch
- ☐ Continuous
- ☐ None

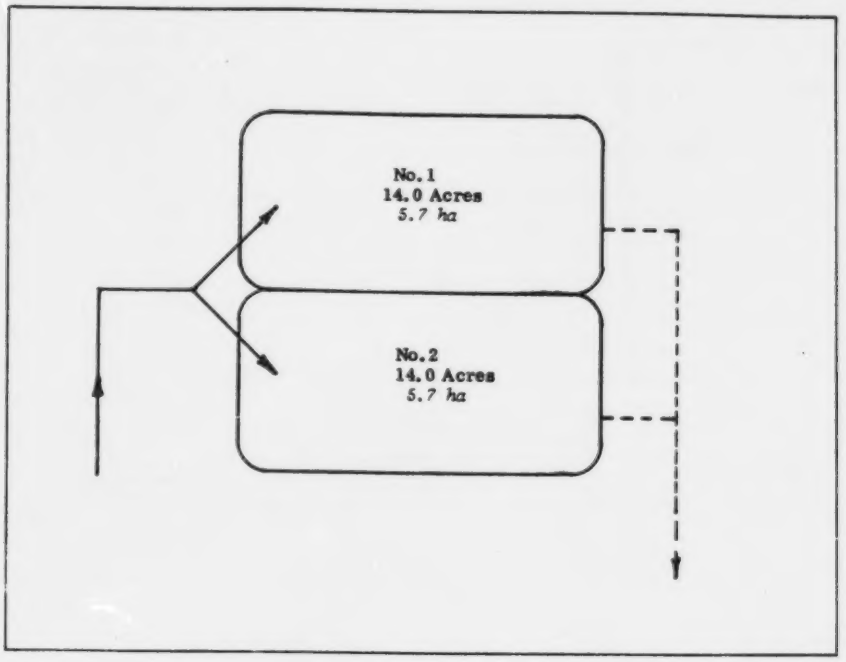
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 486 Igpm 36.8 l/s
Pump 2 : 486 Igpm 36.8 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001845 GLENCOE LAGOON (NO DISCHARGE IN 79)

MUNICIPALITY : GLENCOE
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,743
POPULATION SERVED : 1,557
PERCENT SERVED : 89.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : 212.0 MG/L DESIGN SUSP.SOLIDS : 212.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG
JAN/79-DEC/79																
JAN	10.438	.337	1.073													
FEB	8.710	.311	.482													
MAR	15.275	.493	1.314													
APR	18.450	.610	2.954													
MAY	9.987	.322	.517		350.0				252.0							
JUN	9.407	.313	.657													
JUL	7.483	.241	.345		570.0				644.0							
AUG	7.564	.244	.332													
SEP	7.837	.261	.389													
OCT	8.338	.268	.322													
NOV	10.750	.346	.807		155.0				163.0				7.1			
DEC	13.219	.426	1.296													
TOTAL	127.438															
AVERAGE		.348			325.0				353.0				7.1			
MAXIMUM			2.954													
NO. OF SAMPLES					3				3				1			

Waste Stabilization Pond

PROJECT : (COTTAM) GOSFIELD

Cell Acreage : 10.0 . 10.0 *Cell area :* *4.0 + 4.0 ha*

Total Acreage : 20.0 *Total hectares :* *8.0*

Commenced Operation: JUN 1976

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- □ Continuous
- □ Annual
- ■ Other : Semi-annual

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

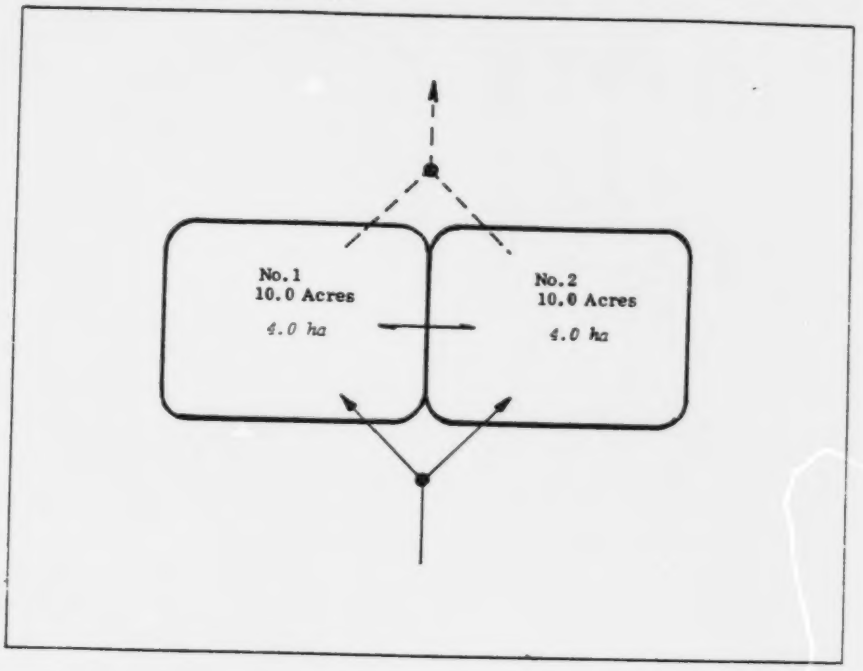
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 370 (U.S.)gpm 23.3 l/s
Pump 2 : 370(U.S.)gpm 23.3 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002005 COTTAM LAGOON (DIS 7 D-OCT & 18 D-NOV)

MUNICIPALITY GOSFIELD N. PV COTTAM
REGION 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON
PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION 850
POPULATION SERVED 700
PERCENT SERVED 82.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	6.437	.207	.286		*				*				*			
FEB	6.832	.244	.532		*				*				*			
MAR	7.910	.255	.491		*				*				*			
APR	8.331	.277	.440		*				*				*			
MAY	7.979	.257	.490		130.0				79.0				9.6			
JUN	6.244	.208	.297		82.0				59.0				6.1			
JUL	6.024	.194	.223		24.0				32.0				3.3			
AUG	5.466	.176	.245		52.0				31.0				3.6			
SEP	5.732	.191	.250		106.0				66.0				7.7			
OCT	5.986	.193	.273	11.200	76.0	5.6	92		40.0	23.5	41		5.0	1	97	
NOV	6.459	.215	.318	34.400	*	2.8			*	16.0			*	1		
DEC	6.839	.221	.320		64.0				39.0				4.1			
TOTAL	80.239			45.600				5.7				2.3				0.441
AVERAGE		.220			76.2	4.2	94		49.4	19.7	60		5.6	1	97	
MAXIMUM			.532	34.400												
NO. OF SAMPLES					7	2			7	2			7	2		

Waste Stabilization Pond

PROJECT : HARROW

Cell Acreage : 15.0 + 15.0 + 15.0 *Cell area : 6.1 + 6.1 + 6.1 ha*

Total Acreage : 45.0 *Total hectares : 18.3*

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : Series-parallel

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal: YES

- ■ Batch
- ☐ Continuous
- ☐ None

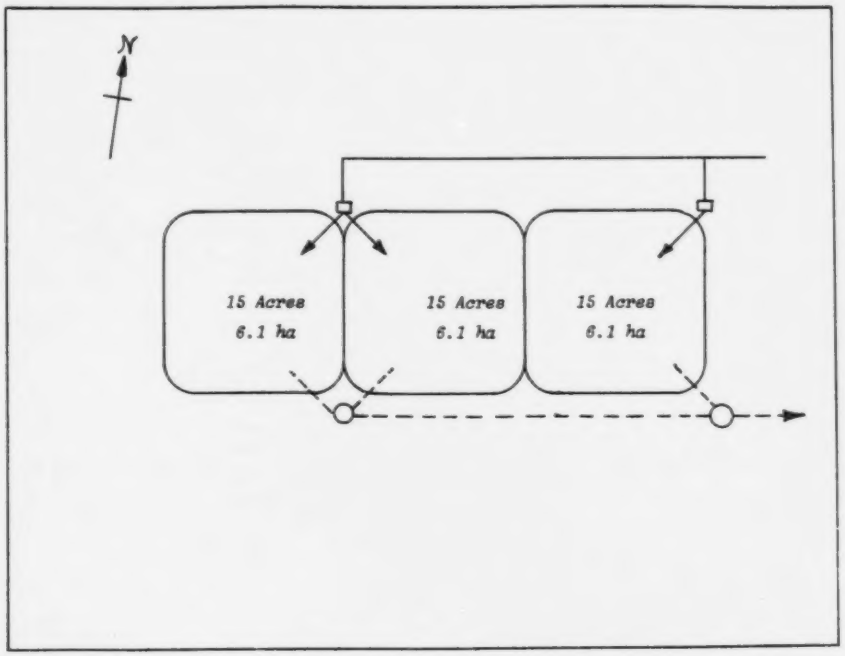
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002103 HARROW LAGOON

MUNICIPALITY : HARROW
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,039
POPULATION SERVED : 2,274
PERCENT SERVED : 111.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.048 1000 M3 DESIGN BOD5 : 250.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION					REDUCTION				REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/78-DEC/78																
JAN	26.217	.846	1.041	10.801		16.0				11.0				5.8		
FEB	27.044	.966	2.987	13.747												
MAR	31.276	1.009	2.755	15.220		9.5			183.0	22.0	87		6.8	2.3	66	
APR	38.098	1.269	5.181	14.730	126.5	6.2	95		230.5	3.8	98		8.7	1.4	82	
MAY	29.943	.966	1.450	15.221	122.0	3.6	97		108.0	24.6	77		8.0	1.4	81	
JUN	27.307	.910	1.014	11.790	110.0	5.4	95		93.0	14.7	84			2.2		
JUL	26.447	.853	1.041	12.183	155.0	6.7	95		275.0	14.7	94		11.0	2.5	76	
AUG	26.426	.852	.955	5.502	1040.0	5.8	99		2697.0	17.0	99			2.8		
SEP	26.294	.876	1.068		275.0				301.0				15.6			
OCT	28.281	.912	1.132		840.0				1878.0							
NOV	26.783	.893	1.100		285.0				739.0				5.2			
DEC	31.079	1.003	1.823		88.6				62.3				5.1			
TOTAL	345.195			99.194				114.0				33.1				2.079
AVERAGE		.946			338.0	7.6	97		656.6	15.4	97		8.6	2.6	69	
MAXIMUM			5.181	15.221												
NO. OF SAMPLES					14	22			15	23			10	22		

Waste Stabilization Pond

PROJECT : HENSALL

Cell Acreage : 12.05 + 12.68 + 12.15 *Cell area : 4.9 + 5.1 + 4.9 ha*

Total Acreage : 36.88 *Total hectares : 14.9*

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

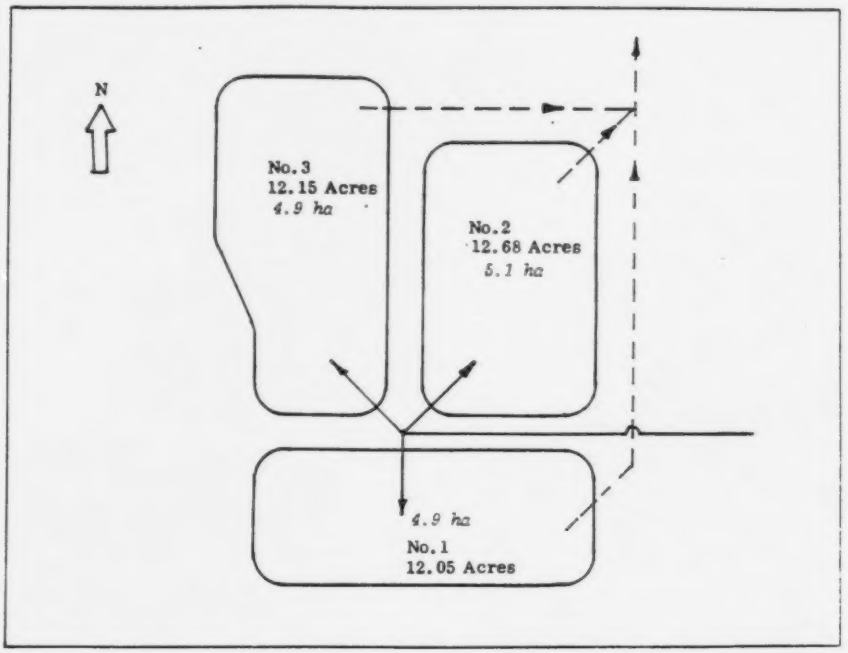
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 335 lgpm 25.4 l/s
Pump 2 : 335 lgpm 25.4 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000926 HENSALL LAGOON (NO DISCHARGE IN 79)
MUNICIPALITY : HENSALL
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL
CURRENT POPULATION : 1,005
POPULATION SERVED : 987
PERCENT SERVED : 98.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.588 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	11.115	.359														
FEB	9.447	.337			180.0				309.0				9.8			
MAR	16.229	.524	1.287		39.0				52.0				2.4			
APR	14.733	.491	1.863													
MAY	9.810	.316	.509													
JUN																
JUL	9.123	.294	.457													
AUG	8.564	.276	.331													
SEP																
OCT	11.878	.383	.504													
NOV																
DEC	16.838	.543	1.004													
TOTAL	107.737															
AVERAGE		.391			99.5				180.5				6.1			
MAXIMUM			1.863													
NO. OF SAMPLES					4				4				4			

Waste Stabilization Pond

PROJECT : LUCAN

Cell Acreage : 5 + 5 — *Cell area : 2.0 + 2.0 ha*

Total Acreage : 10 — *Total hectares : 4.0*

Commenced Operation (Cell 1) : 1964
Expansion (Cell 2) : 1972

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

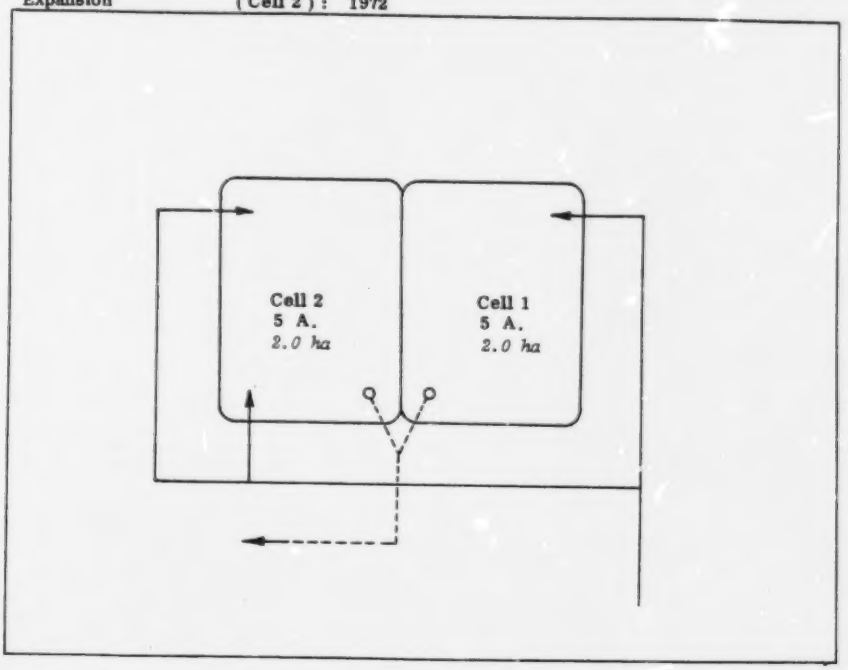
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 300 I gpm 22.7 l/s
Pump 2 : 300 I gpm 22.7 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000855 LUCAN LAGOON

MUNICIPALITY : LUCAN
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 1,547
POPULATION SERVED : 1,589
PERCENT SERVED : 102.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.377 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	24.530	.791	2.546		94.0				69.0				6.0			
FEB	18.834	.673	2.782		56.0				33.0				4.5			
MAR	47.497	1.532	5.514						79.0				5.4			
APR	41.245	1.374			48.0	16.0			68.0	4.0			3.5	3.2		
MAY	26.044	.840														
JUN	8.264	.275														
JUL	16.806	.542	1.227													
AUG	*	*														
SEP	*	*														
OCT	13.140	.423														
NOV	27.248	.908														
DEC	28.933	.933														
TOTAL	252.541							12.6				14.7				0.404
AVERAGE		.829			66.0				62.2				4.8			
MAXIMUM			5.514													
NO. OF SAMPLES					3				4				4			

Waste Stabilization Pond

PROJECT : MILVERTON

Cell Acreage : 15.0
Total Acreage : 15.0

Cell area: 6.1 ha
Total hectares: 6.1

Commenced Operation : Mar. 1967

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ■ Continuous
- ☐ None

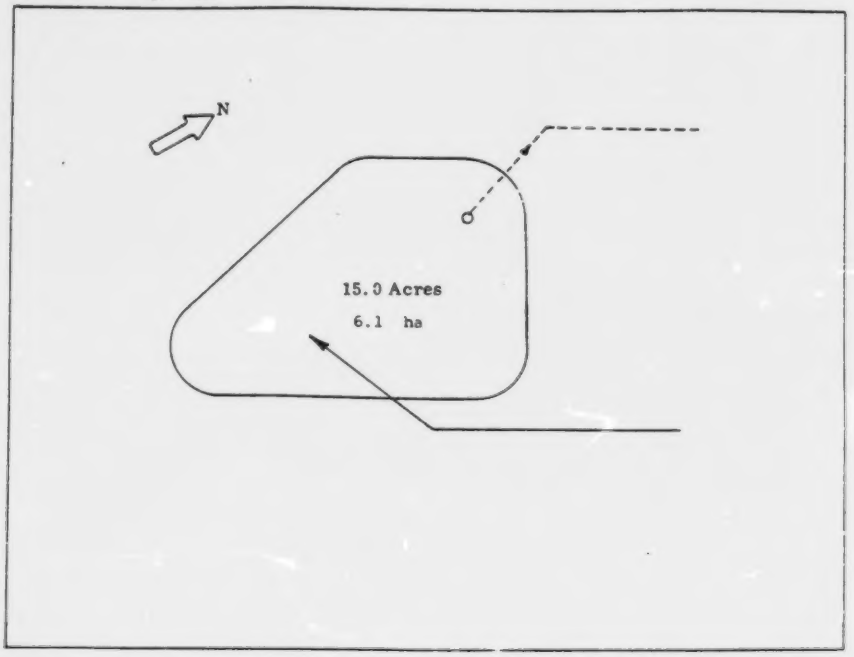
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 367 lgpm 27.8 l/s
Pump 2 : 367 lgpm 27.8 l/s

Total Cap : N/A



Signifigant Industries : Glitz Cheese

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110001079 MILVERTON LAGOON — MUNICIPALITY MILVERTON, REGION 01 SOUTHWESTERN

TREATMENT FACILITY CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL — * DATA NOT AVAILABLE

CURRENT POPULATION 1,489
POPULATION SERVED 1,443
PERCENT SERVED 98.2

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.383 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	18.548	.598	1.391		2445.0				481.0				30.6			
FEB	14.465	.517	.900		1113.0				1438.0				19.8			
MAR	23.753	.766	1.700		1437.0	109.0	92		583.0	98.0	97		22.4	1.2	94	
APR	25.210	.840	1.620		610.0	59.0	90		357.0	51.4	85		16.0	1.8	88	
MAY	20.420	.650	1.190		510.0				324.0				11.0			
JUN	17.360	.578	.800		750.0				319.0				14.7			
JUL	23.060	.740	3.300		1880.0				1576.0				44.8			
AUG	25.330	.820	1.330		202.4				187.6				7.4			
SEP	15.010	.500	1.050		265.0				250.0				12.0			
OCT	*	*			*				*				*			
NOV	23.010	.760	1.380		342.0				273.0				10.0			
DEC	24.730	.790	1.430		349.0				308.0				11.6			
TOTAL	230.896							184.2				120.1				3.855
AVERAGE		.687			882.1	84.0	90		554.0	33.7	93		18.2	1.5	91	
MAXIMUM			3.300													
NO. OF SAMPLES					24	8			24	8			24	8		

Waste Stabilization Pond

PROJECT : MITCHELL

Cell Acreage : 21 + 21 + 25.5 Cell area : 8.5 + 8.5 + 10.3 ha

Total Acreage : 67.5 Total hectares : 27.3

Commenced Operation : Aug. 1961

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal (When Possible)
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

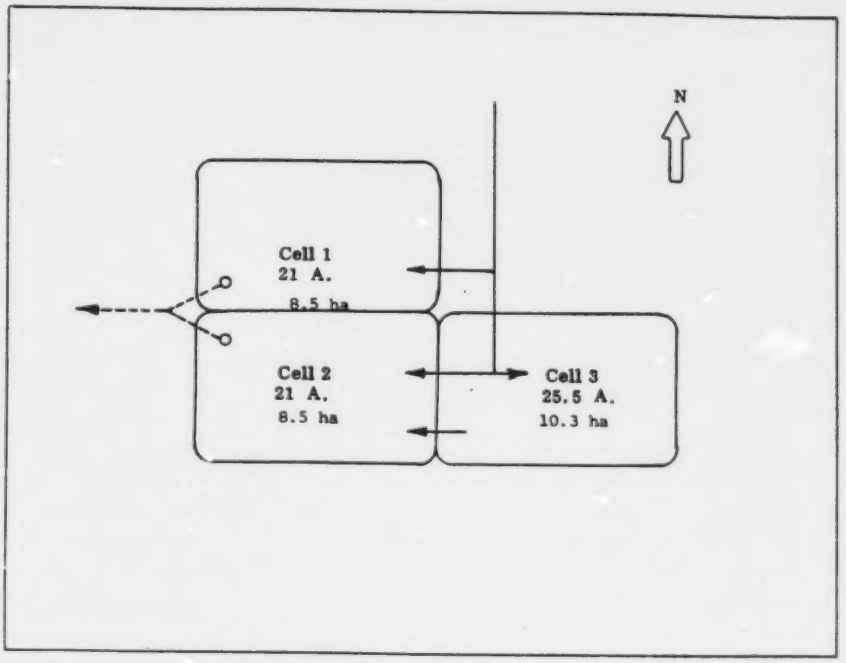
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 1022 Igpm 77.4 l/s
Pump 2 : 671 Igpm 50.8 l/s

Total Cap : N/A



Signifigant Industries : Stacey Bros Ltd (Creamery)

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000472 MITCHELL LAGOON

MUNICIPALITY : MITCHELL
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 2,750
POPULATION SERVED : 2,708
PERCENT SERVED : 98.4

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.045 1000 M3 DESIGN BODS : 215.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/CLURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	67.913	2.191														
FEB	53.761	1.920			100.0				90.0				6.4			
MAR	72.018	2.323														
APR	103.200	3.440	7.500		110.0	10.6	90		133.0	34.2	74		4.3	.8	79	
MAY	*	*			*				*				*			
JUN	*	*			*				*				*			
JUL	*	*			*				*				*			
AUG	*	*			*				*				*			
SEP	32.000	1.060														
OCT	49.000	1.581														
NOV	83.000	2.760			*	5.3			*	4.9			*	.5		
DEC	125.000	4.030			144.0				74.0				11.2			
TOTAL	585.892							43.4				31.3				2,601
AVERAGE		2.413			118.0	7.9	93		99.0	19.5	80		7.3	.7	89	
MAXIMUM			7.500													
NO. OF SAMPLES					3	11			3	11			3	11		

Waste Stabilization Pond

PROJECT : MOORE TWP. (BRIGDEN)

Cell Acreage : 10 + 10

Cell area : 4.0 + 4.0 ha

Total Acreage : 20

Total hectares : 8.0

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

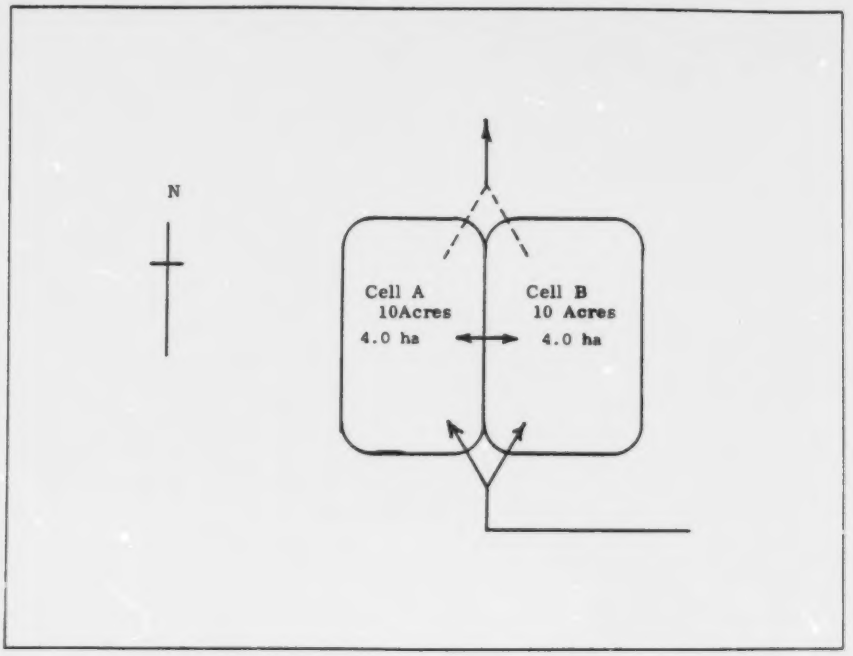
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 265 Igpm 20.1 l/s
Pump 2 : 265 Igpm 20.1 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002023 BRIGDEN POLICE VILLAGE LAGOON (NO DISCHARGE IN 79)

MUNICIPALITY : MOORE (BRIGDEN)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION 500
POPULATION SERVED 600
PERCENT SERVED 120.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.340 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	3.441	.111														
FEB	2.928	.105														
MAR	3.905	.126														
APR	5.748	.191	1.494													
MAY	3.342	.107	.421		114.0				76.0				7.8			
JUN	2.978	.099			160.0				155.0				10.5			
JUL	2.804	.090			78.0				92.0				14.0			
AUG	3.063	.098	.382		225.0				212.0				10.4			
SEP	2.853	.095			150.0				141.0				11.1			
OCT	3.565	.115			175.0				107.0				12.9			
NOV	3.996	.132														
DEC	4.568	.147			102.0				75.0				7.1			
TOTAL	43.181															
AVERAGE		.118			143.4				122.5				10.5			
MAXIMUM			1.494													
NO. OF SAMPLES					7				7				7			

Waste Stabilization Pond

PROJECT : NORWICH

Cell Acreage : 15 + 15 Cell area : 6.1 + 6.1 ha

Total Acreage : 30 Total hectares : 12.2

Commenced Operation (Cell 1) : May 1974
Expansion : (Cell 2) : Spring 1976

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- ■ Continuous
- □ None

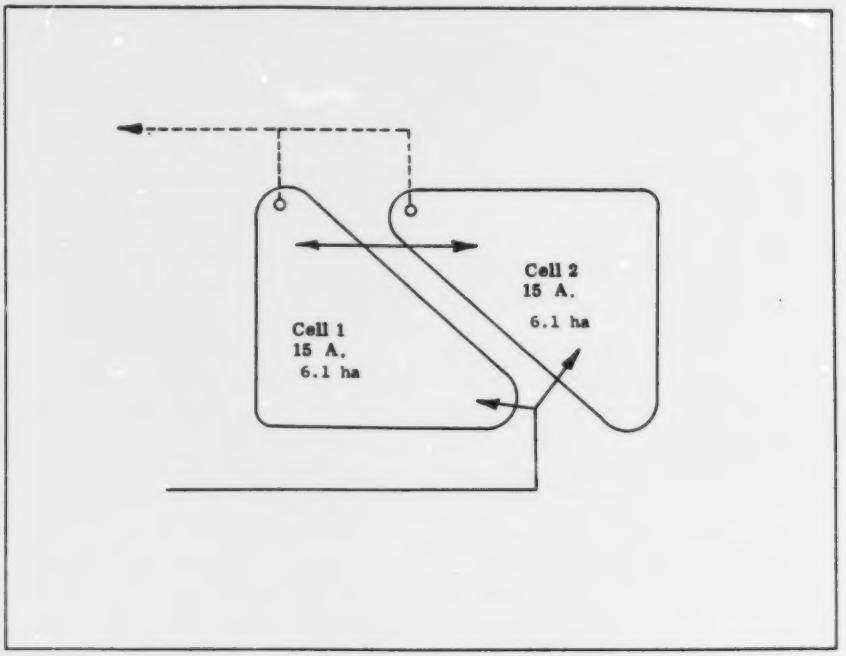
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 800 I gpm 60.6 l.s
Pump 2 : 800 I gpm 60.6 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001480 NORWICH LAGOON

MUNICI ... : NORWICH
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 9,795
POPULATION SERVED : 2,154
PERCENT SERVED : 21.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.363 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
						REDUCTION				REDUCTION				REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/78-DEC/78																
JAN	2.287	.074	.232		150.0	13.0	91		575.0	30.0	94		2.5	.9	64	
FEB	1.727	.062	.191		175.0	10.0	94		333.0	20.0	93		8.5	1.6	81	
MAR	3.050	.098	.300		17.0	108.0	-		11.0	696.0	-		1.4	4.3	-	-
APR	4.127	.137	.345		68.0	22.0	67		69.0	47.0	31		3.8	.9	76	
MAY	2.122	.068	.090		•				•				•			
JUN	1.600	.053	.077		•				•				•			
JUL	1.381	.044	.086		•				•				•			
AUG	1.595	.051	.090		•				•				•			
SEP	1.513	.050	.068		•				•				•			
OCT	1.700	.054	.077		•				•				•			
NOV	2.750	.091	.250		•				•				•			
DEC	3.095	.099	.340		•				•				•			
TOTAL	26.947							1.7				1.3				0.096
AVERAGE		.073			102.5	38.2	62		247.0	198.2	19		4.0	1.9	52	
MAXIMUM			.345													
NO. OF SAMPLES					4	4			4	4			4	4		

Waste Stabilization Pond

PROJECT : OIL SPRINGS

Cell Acreage : 7.0 + 7.0

Cell area : 2.8 + 2.8 ha

Total Acreage : 14.0

Total hectares : 5.6

Commenced Operation : November 1976

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

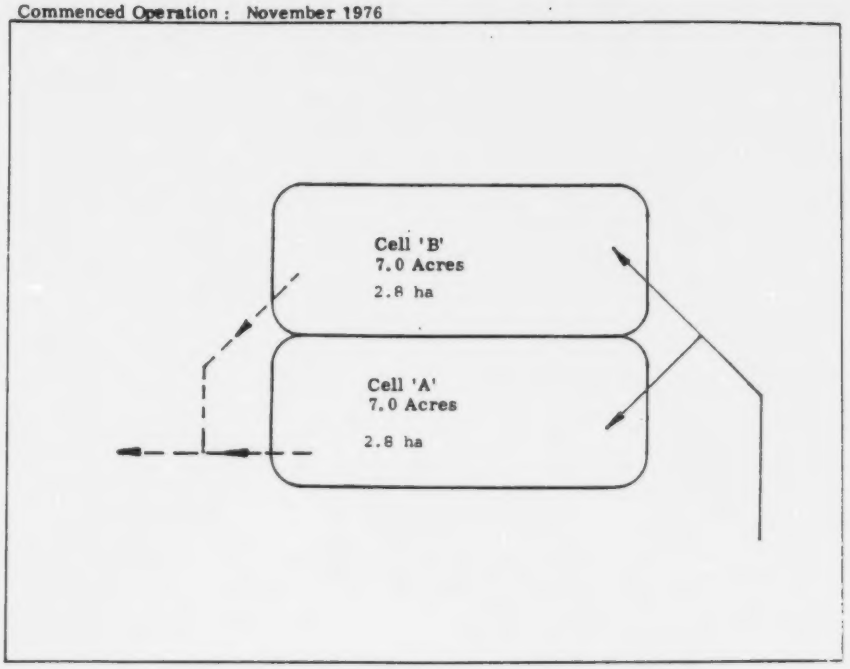
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001998 OIL SPRINGS LAGOON

MUNICIPALITY OIL SPRINGS
REGION 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION 675
POPULATION SERVED 630
PERCENT SERVED 93.3

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	5.401	.174	.377		130.0	43.0	66		124.0	109.0	12		9.4	3.8	59	
FEB	5.760	.206	.718		120.0				138.0				8.5			
MAR	7.183	.232	.759		24.0	10.0	58		151.0	24.0	84		2.7	1.4	48	
APR	7.137	.237	.881		88.0	30.0	65		99.0	85.0	14		6.4	2.5	60	
MAY	5.455	.175	.236		*				*				*			
JUN	5.641	.188	.490		*				*				*			
JUL	5.250	.169	.418		*				*				*			
AUG	5.682	.183	.559		*				*				*			
SEP	4.773	.159	.209		*				*				*			
OCT	5.152	.166	.195		*				*				*			
NOV	5.646	.188	.368		*				*				*			
DEC	7.205	.232	.745		*				*				*			
TOTAL	70.285							4.4				3.8				0.295
AVERAGE		.192			90.5	27.6	69		128.0	72.6	43		6.7	2.5	61	
MAXIMUM			.881													
NO. OF SAMPLES					4	3			4	3			4	3		

Waste Stabilization Pond

PROJECT : PORT STANLEY

Cell Acreage : 10 + 10 + 10 + 10 — Cell area : 4.0 + 4.0 + 4.0 + 4.0 ha

Total Acreage : 40 — Total hectares : 16.0

Commenced Operation : Jan. 1973

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

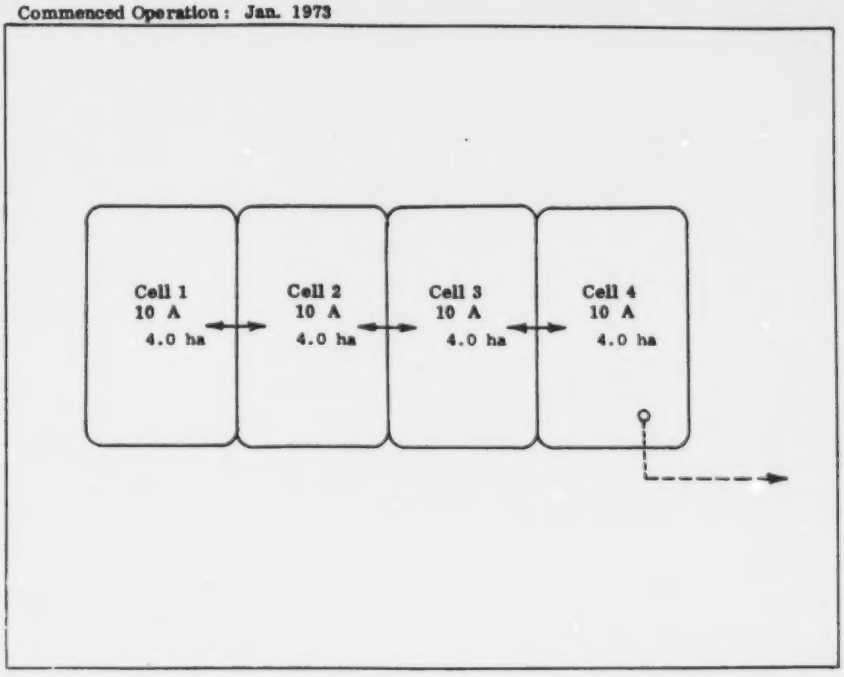
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 1000 US gpm 63.1 l/s
Pump 2 : 1000 US gpm 63.1 l/s

Total Cap : 1500 US gpm 94.7 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001373 PORT STANLEY LAGOON

MUNICIPALITY : PORT STANLEY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,902
POPULATION SERVED : 1,880
PERCENT SERVED : 98.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.488 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	20.971	.677	.877		72.0				51.3				4.1			
FEB	21.340	.755	1.123		37.0	2.4	93		37.5	4.5	88		2.3	1.2	47	
MAR	26.062	.838	1.127		37.0	6.4	82		42.0	7.3	82		2.4	1.5	37	
APR	34.800	1.160	2.200		57.0	14.8	74		33.5	33.8	-		2.9	1.2	58	
MAY	27.800	.897	1.200		119.0	6.8	94		74.0	10.2	86		5.6	1.5	72	
JUN	25.200	.840	1.300		88.0				48.0				4.2			
JUL	25.400	.819	.900		76.0				49.0				4.4			
AUG	26.100	.842	.900		143.0				108.5				8.1			
SEP	21.000	.700	.900		103.0				57.0				3.9			
OCT	20.000	.645	.800		84.0				104.5				3.9			
NOV	24.300	.810	1.300		70.0	6.7	90		34.5	15.3	55		4.6	1.8	60	
DEC	165.600	5.300	14.100		33.0	12.1	62		20.0	19.5	2		7.0			
TOTAL	438.573							39.2				17.6				1.28
AVERAGE		1.190			74.8	8.1	89		54.9	15.1	72		4.2	1.4	68	
MAXIMUM			14.100													
NO. OF SAMPLES					21	26			21	26			26	25		

Waste Stabilization Pond

PROJECT : RALEIGH & TILBURY EAST (P.V. MERLIN)

Cell Acreage : 14.0 + 13.5 Cell area : 5.7 + 5.5 ha

Total Acreage : 27.5 Total hectares : 11.2

Commenced operation: OCT 1976

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

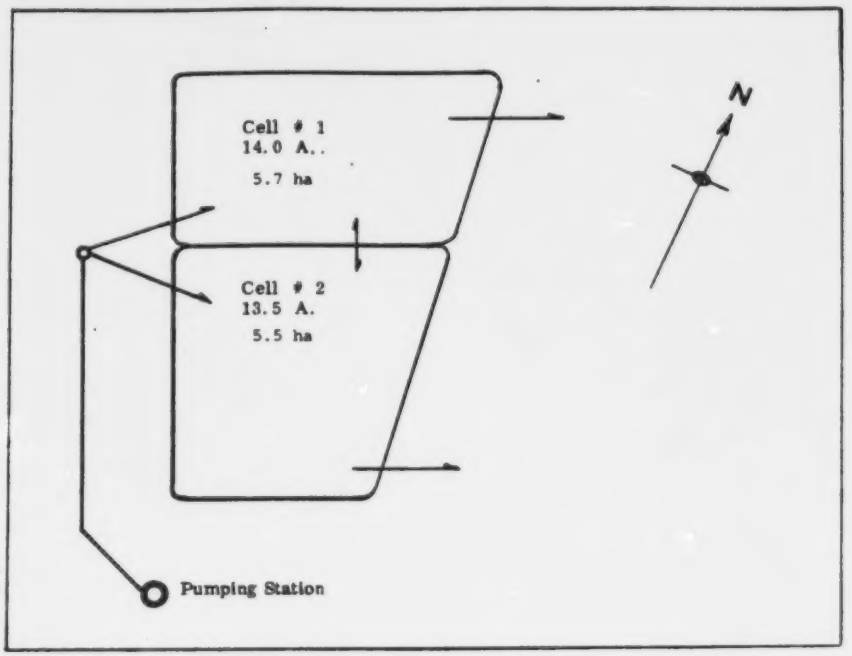
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 290 Igpm 22.0 l/s
Pump 2 : 290 Igpm 22.0 l/s

Total Cap



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000935 .MERLIN P. V. LAGOON (NO DISCHARGE IN 79) MUNICIPALITY : RALEIGH TILBURY E MERLIN
REGION 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION 1,000
POPULATION SERVED 657
PERCENT SERVED 65 7

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.931 1000 M3 DESIGN BOD5 : 110.0 MG/L DESIGN SUSP.SOLIDS : 110.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG
JAN/79-DEC/79																
JAN	4.632	.149	.291		650.0				792.0				81.5			
FEB	4.241	.151	.314		120.0				137.0				7.0			
MAR	5.416	.175	.345													
APR	6.800	.227	1.050		380.0				2204.0				13.5			
MAY	5.120	.165	.385		890.0				10506.0				8.8			
JUN	4.512	.150	.249		380.0				509.0				57.5			
JUL	4.241	.137	.245		170.0				428.0				6.5			
AUG	4.135	.133	.248		185.0				111.0				7.2			
SEP	4.270	.142	.224		305.0				348.0				10.5			
OCT	4.286	.138	.245		325.0				174.0				12.6			
NOV	4.477	.149	.285													
DEC	5.670	.182	.548		500.0				199.0				9.3			
TOTAL	57.900															
AVERAGE		.158			409.5				1540.8				21.4			
MAXIMUM			1.050													
NO. OF SAMPLES					10				10				10			

Waste Stabilization Pond

PROJECT : RIDGETOWN

Cell Acreage : 13.5 + 13.0 + 13.0 Cell area : 5.5 + 5.2 + 5.2 ha

Total Acreage : 39.5 Total hectares: 15.9

Commenced Operation : Sept. 1973

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

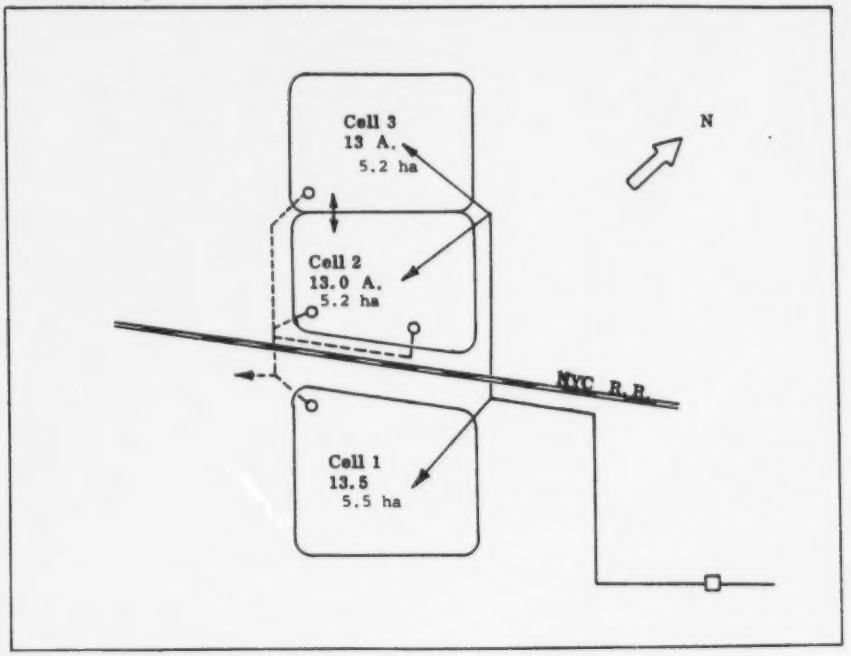
Flow Measurement :

- □ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 875 I gpm 66.2 l/s
Pump 2 : 875 I gpm 66.2 l/s

Total Cap : 875 I gpm 66.2 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001364 RIDGETOWN LAGOON

MUNICIPALITY : RIDGETOWN
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 3,214
POPULATION SERVED : 2,750
PERCENT SERVED : 88.9

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.581 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	22.614	.729														
FEB	20.072	.717														
MAR	19.724	.636														
APR	37.181	1.239	2.280	68.906		8.8				74.0				1.5		
MAY	29.350	.946	1.090		82.0								6.0			
JUN	23.910	.797	.880													
JUL	20.190	.650			196.0				155.0				7.1			
AUG	20.410	.660	.880													
SEP	18.478	.616	.700		160.0								7.3			
OCT	20.280	.650	.710		112.0				89.0				8.8			
NOV	19.694	.658	.850													
DEC	23.490	.780	1.000		240.0				156.0				12.9			
TOTAL	275.393			68.906				41.0				16.3				1.972
AVERAGE		.755			157.0	8.8	95		133.3	74.0	44		8.3	1.5	82	
MAXIMUM			2.280	68.906												
NO. OF SAMPLES					4	2			3	2			6	2		

Waste Stabilization Pond

PROJECT : RODNEY

Cell Acreage : 16

Cell area : 6.5 ha

Total Acreage : 16

Total hectares: 6.5

Commenced Operation : March 1975

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

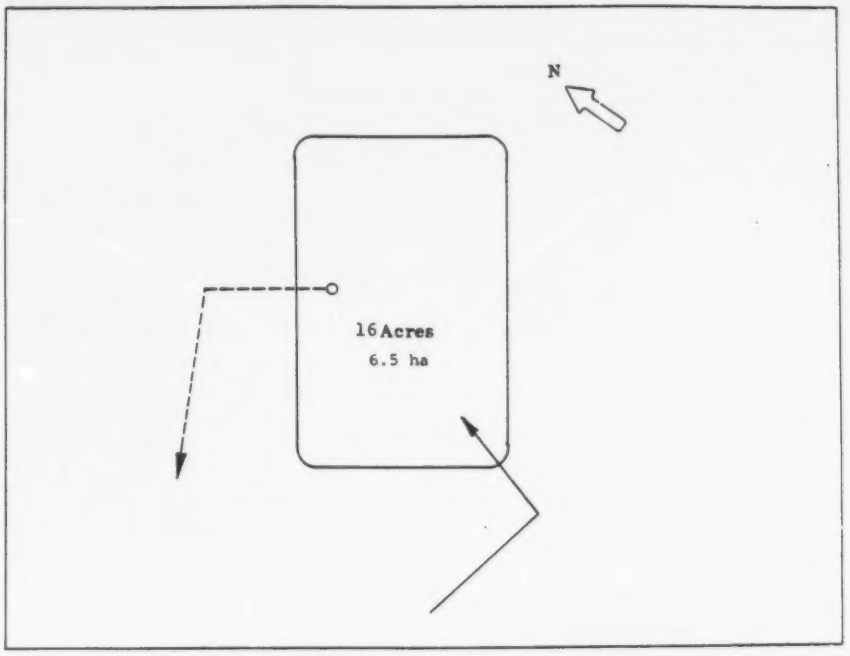
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 520 l gpm 39.4 l/s
Pump 2 : 520 l gpm 39.4 l/s

Total Cap : 520 l gpm
39.4 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110001667 RODNEY LAGOON

MUNICIPALITY : RODNEY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,017
POPULATION SERVED : 1,164
PERCENT SERVED : 114 4

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.845 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	8.228	.265	.341		1220.0				13072.0				28.0			
FEB	9.115	.326	.868		620.0				190.0				14.0			
MAR	10.819	.349	5.842		840.0				2576.0				31.0			
APR	11.395	.380	.778	41.884	258.0	36.0	86		107.0	110.0	-		5.5	2.9	46	
MAY	12.252	.395	1.152		170.0	44.0	74		78.0	109.0	-		3.0	2.6	13	
JUN	9.885	.330	.586													
JUL	9.225	298	.591		620.0				540.0				12.0			
AUG	8.661	.279	.381		298.0				155.0				9.5			
SEP	8.341	.278	.372		235.0				156.0				8.2			
OCT	8.614	.278	.381		500.0				204.0				9.8			
NOV	9.042	.301	.440		370.0				542.0				10.9			
DEC	10.945	.353	.518		360.0				152.0				12.5			
TOTAL	118.522			41.884				53.5				175.3				1.24E
AVERAGE		.319			499.1	40.0	91		1615.6	109.5	93		13.1	2.7	78	
MAXIMUM			5.842	41.884												
NO. OF SAMPLES					11	1			11	1			11	2		

Waste Stabilization Pond

PROJECT : SARNIA (BRIGHT'S GROVE)

Cell Acreage :

Total Acreage :

Commenced Operation: Fall 1977

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ● Batch
- ☐ Continuous
- ☐ None

Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110001989 BRIGHT'S GROVE POLICE VILLAGE LAGOON

MUNICIPALITY : SARNIA BRIGHTS GROVE
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 17,513
POPULATION SERVED : 1,500
PERCENT SERVED : 8.5

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.273 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	19.880	.640			*				*				*			
FEB	11.865	.424			*				*				*			
MAR	16.370	.550			*				*				*			
APR	21.400	.710	3.570		*				*				*			
MAY	15.720	.510	1.960		*				*				*			
JUN	14.380	.470			*				*				*			
JUL	13.830	.460			*				*				*			
AUG	13.540	.440			*				*				*			
SEP	12.300	.410			*				*				*			
OCT	13.600	.440			*				*				*			
NOV	13.060	.440			*				*				*			
DEC	15.490	.530			*				*				*			
TOTAL	181.435															
AVERAGE		.502														
MAXIMUM			3.570													
NO. OF SAMPLES																

Waste Stabilization Pond

SEAFORTH

Cell Acreage : 10.0 + 10.0 + 10.0

Cell area : 4.0 + 4.0 + 4.0 ha

Total Acreage : 30.0

Total hectares : 12.0

Commenced Operation : Nov. 1963

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : 1 & 2 parallel series to #3

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other :

Phosphorus Removal.

- ■ Batch
- ☐ Continuous
- ☐ None

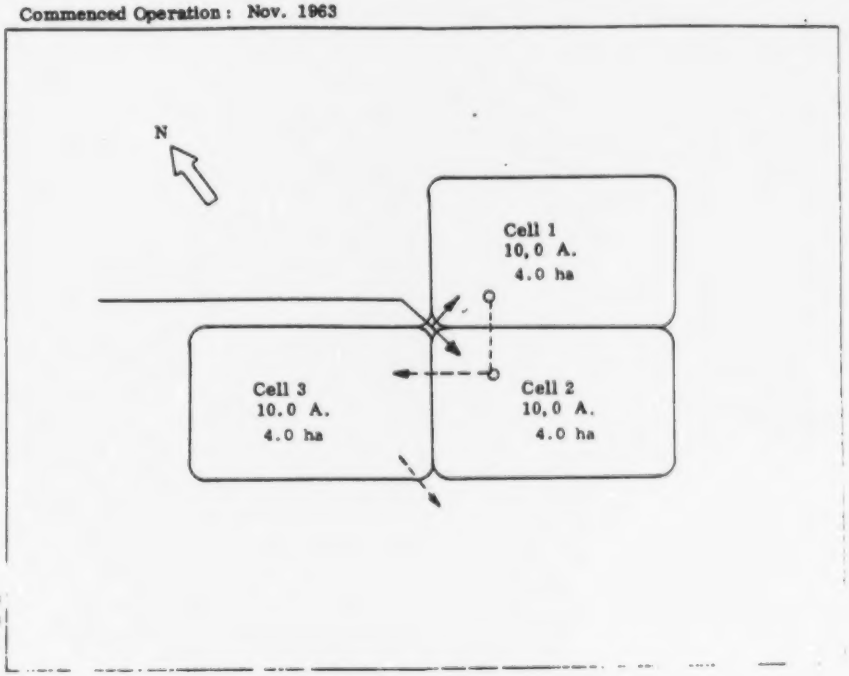
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 828 US gpm 52.2 l/s
Pump 2 : 828 US gpm 52.2 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001177 SEAFORTH LAGOON

MUNICIPALITY : SEAFORTH
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION 2,029
POPULATION SERVED 2,046
PERCENT SERVED 100.8

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.227 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	50.292	1.622	3.787													
FEB	38.062	1.360	2.423													
MAR	87.979	2.838	5.073		30.0				32.0				2.4			
APR	78.210	2.540	5.360		42.0	9.5	77		52.0	25.3	51		1.9	.6	84	
MAY	47.270	1.520	2.170		34.0	13.8	59		21.0	26.5	-		2.0	.3	82	
JUN	34.820	1.160	1.730		32.0				22.0				3.5			
JUL	33.870	1.090	1.850		28.0				27.0				2.9			
AUG	28.810	.930	1.480		22.0				41.0				2.6			
SEP	27.030	.900	1.210		22.0				16.0				2.5			
OCT	35.850	1.160	1.730		195.0	11.9	93		136.0	15.9	88		8.8	.7	91	
NOV	54.330	1.810	5.210		54.0				29.0				3.2			
DEC	66.630	2.150	4.940		60.0				35.0				4.7			
TOTAL	581.173							23.3				10.8				1.6
AVERAGE		1.890			51.9	11.7	77		41.1	22.5	45		3.4	.6	82	
MAXIMUM			5.360													
NO. OF SAMPLES					10	6			10	6			10	6		

Waste Stabilization Pond

PROJECT : SOMBRA TWP
(PORT LAMBTON)

Cell Acreage : 12 + 12

Cell area: 4.9 + 4.9 ha

Total Acreage : 24

Total hectares: 9.8

Commenced Operation : Nov. 1975

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

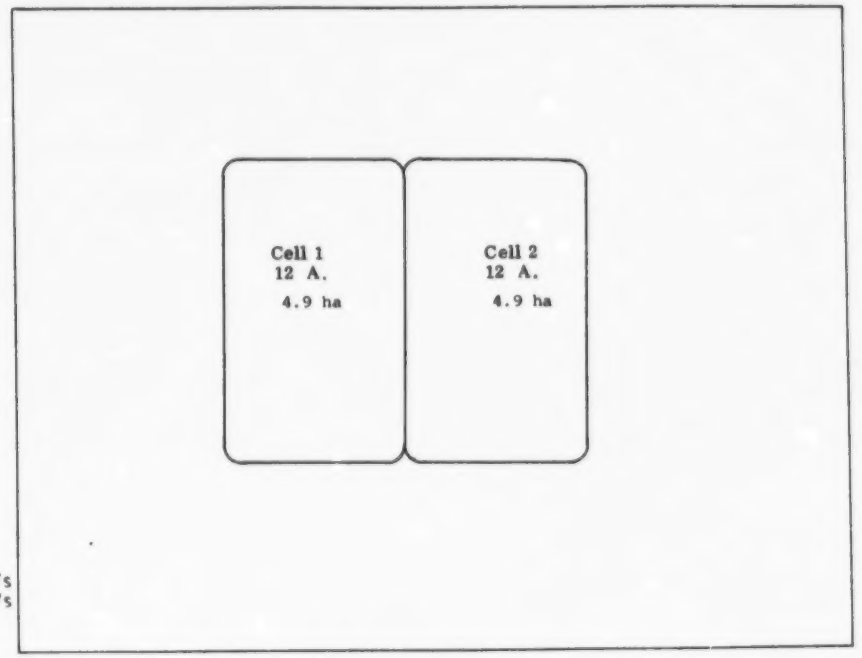
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 500 I gpm 37.9 l/s
Pump 2 : 500 I gpm 37.9 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001694 PORT LAMBTON LAGOON (NO DISCHARGE IN 79)

MUNICIPALITY : SOMBRA (PORT LAMBTON)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 4,258
POPULATION SERVED : 720
PERCENT SERVED : 16.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.088 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	11.156	.360	.720													
FEB	8.815	.315	.630													
MAR	11.770	.380	.760													
APR	15.367	.512	2.929													
MAY	11.326	.365	1.479		104.0				71.0				8.2			
JUN	9.864	.329			116.0				92.0				8.5			
JUL	9.607	.309			86.0				98.0				7.8			
AUG	9.543	.307	.900		96.0				116.0				7.9			
SEP	8.846	.295			112.0				98.0				8.3			
OCT	9.605	.309			118.0				109.0				9.8			
NOV	4.050	.135														
DEC	1.018	.032			185.0				111.0				8.3			
TOTAL	110.987															
AVERAGE		.304			116.2				99.4				8.1			
MAXIMUM			2.929													
NO. OF SAMPLES					7				7				7			

Waste Stabilization Pond

PROJECT : SOMBRA TWP (SOMBRA)

Cell Acreage : 12 + 12

Cell area : 4.9 + 4.9 ha

Total Acreage : 24

Total hectares : 9.8

Commenced Operation : Nov. 1975

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

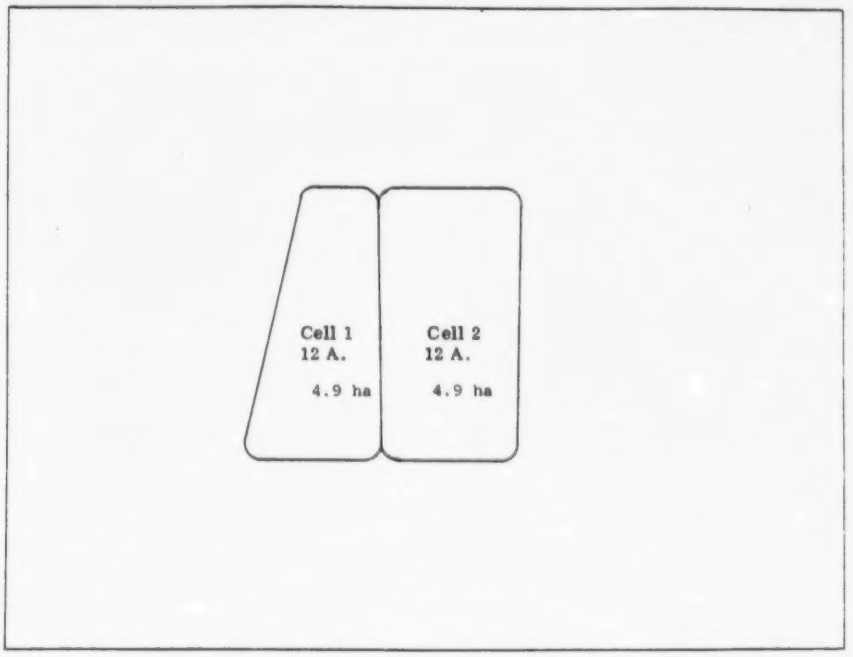
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 500 I gpm 37.9 l/s
Pump 2 : 500 I gpm 37.9 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001685 PORT SOMBRA LAGOON (NO DISCHARGE IN 79)

MUNICIPALITY SOMBRA (PORT SOMBRA)
REGION 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION 4,250
POPULATION SERVED 365
PERCENT SERVED 8.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.895 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG
JAN/79-DEC/79																
JAN	5.837	.188	.390													
FEB	4.560	.163	.310													
MAR	5.751	.186	.370													
APR	7.173	.239	1.320													
MAY	4.853	.156	.659		100.0				40.0				6.0			
JUN	4.286	.142			112.0				95.0				7.3			
JUL	4.537	.146			84.0				97.0				7.1			
AUG	4.040	.130			110.0				119.0				8.0			
SEP	3.764	.125			64.0				40.0				6.5			
OCT	2.041	.065			96.0				61.0				6.9			
NOV	2.382	.079														
DEC	2.532	.081														
TOTAL	51.756															
AVERAGE		.142			94.3				75.3				6.9			
MAXIMUM			1.320													
NO. OF SAMPLES					6				6				6			

Waste Stabilization Pond

PROJECT : TILBURY NORTH TWP.
(STONEY POINT P.V.)

Cell Acreage :

Total Acreage :

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110002345 STONEY POINT P V LAGOON (NOV DISCHGE)

MUNICIPALITY : TIBURY NORTH
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL
PHOSPHORUS REMOVAL

CURRENT POPULATION : 3,201
POPULATION SERVED : 1,157
PERCENT SERVED : 36.1

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.272 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
					INFLUENT	EFFLUENT		REDUCTION	INFLUENT	EFFLUENT		REDUCTION	INFLUENT	EFFLUENT		REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/78-DEC/78																
JAN	9.139	.294														
FEB	8.929	.318														
MAR	23.984	.773														
APR	32.900	1.098	1.500													
MAY	20.376	.679	1.147		3.2				9.0				.8			
JUN	18.313	.610	.953		10.0				6.0				.6			
JUL	19.541	.630	.955		22.0				18.5				1.0			
AUG	18.013	.516	.824		38.0				55.0				2.7			
SEP	18.510	.617	1.024		15.0				18.0				1.5			
OCT	16.801	.542	.744		6.0				12.0				1.8			
NOV	17.105	.570	1.404	170.331	18.0	1.9	89		5.0	2.8	48		1.6	.2	82	
DEC	27.730	.895	2.066		11.0				5.0				1.3			
TOTAL	229.341							3.0				3.0				0.279
AVERAGE		.628			15.4	1.9	87		16.0	2.8	83		1.4	.2	80	
MAXIMUM			2.066													
NO. OF SAMPLES					8	1			8	1			8	1		

Waste Stabilization Pond

PROJECT : TILBURY W. (P.V. COMBER)

Cell Acreage : 6.0 + 6.0 Cell area: 2.4 + 2.4 ha

Total Acreage : 12.0 Total hectares: 4.8

Commenced Operation: JUL 1976

Operation :

- ■ Series single cell discharge
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal :

- ■ Batch
- □ Continuous
- □ None

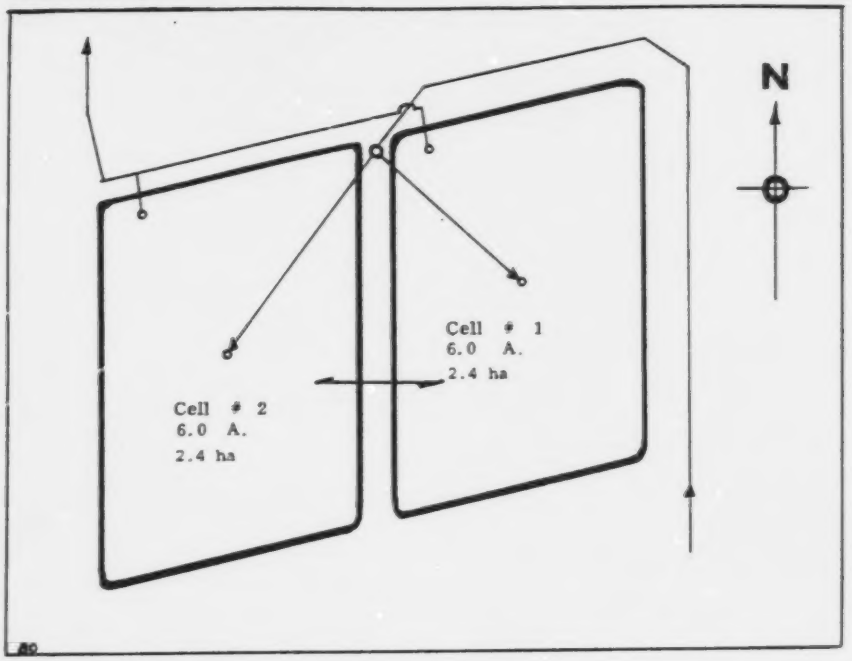
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 170 Igpm 12.9 l/s
Pump 2 : 170 Igpm 12.9 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001676 COMBER LAGOON (CELL 2 DIS NOV/OCT 11 DAYS) MUNICIPALITY : TILBURY WEST PV COMBER
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION 1 627
POPULATION SERVED 640
PERCENT SERVED 39 3

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.383 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	5.575	.180	.218		175.0				94.0				9.9			
FEB	5.132	.183	.245													
MAR	6.892	.222	.436		130.0				4.0				11.4			
APR	6.680	.223	.446		28.0				63.0				1.7			
MAY	5.850	.189	.245		136.0				136.0				2.2			
JUN	5.523	.184	.245		112.0				65.0				7.2			
JUL	6.128	.198	.318		114.0				71.0				8.3			
AUG	5.971	.193	.255		160.0				78.0				7.6			
SEP	6.478	.216	.359		106.0				53.0				5.9			
OCT	6.603	.213	.250	32.400	102.0	3.2	96		50.0	11.0	78		7.0	.1	98	
NOV	6.542	.218	.364	27.000	*	7.0			*	184.0			*	.4		
DEC	7.306	.236	.386		80.0				44.0				4.3			
TOTAL	74.680			59.400				8,9								0,448
AVERAGE		.205			114.3	5.1	95		65.8	97.5	-		6.2	.2	95	
MAXIMUM			.446	32.400												
NO. OF SAMPLES					10	2			10	2			10	2		

Waste Stabilization Pond

PROJECT : WATFORD

Cell Acreage : 15 + 15 Cell area : 6.1 + 6.1 ha

Total Acreage : 30 Total hectares : 12.2

Commenced Operation : N/A

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

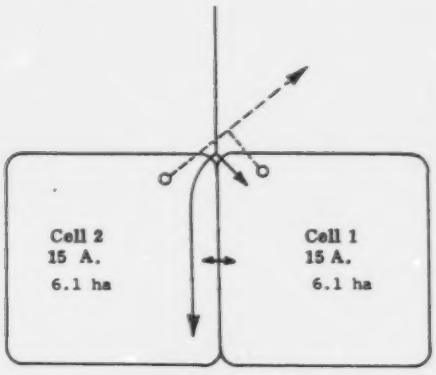
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 525 I gpm 39.7 l/s
Pump : 525 I gpm 39.7 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

* WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001809 WATFORD LAGOON (NO DISCHARGE IN 79)

MUNICIPALITY : WATFORD
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,413
POPULATION SERVED : 1,400
PERCENT SERVED : 99.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.954 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG
JAN/79-DEC/79																
JAN	16.711	.539	1.318													
FEB	15.193	.543	.859													
MAR	21.189	.684	1.123													
APR	19.852	.661	1.922													
MAY	15.679	.505	.836													
JUN	13.165	.438	.568													
JUL	13.833	.446	.559													
AUG	13.510	.435	.627													
SEP	12.460	.415	.645													
OCT	13.724	.442	.604													
NOV	19.697	.656	1.013													
DEC	21.720	.700	1.577													
TOTAL	196.733															
AVERAGE		.539														
MAXIMUM			1.922													
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : WEST LORNE

Cell Acreage : 10 + 10

Cell area : 4.0 + 4.0 ha

Total Acreage : 20

Total hectares : 8.0

Commenced Operation : Nov. 1972

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

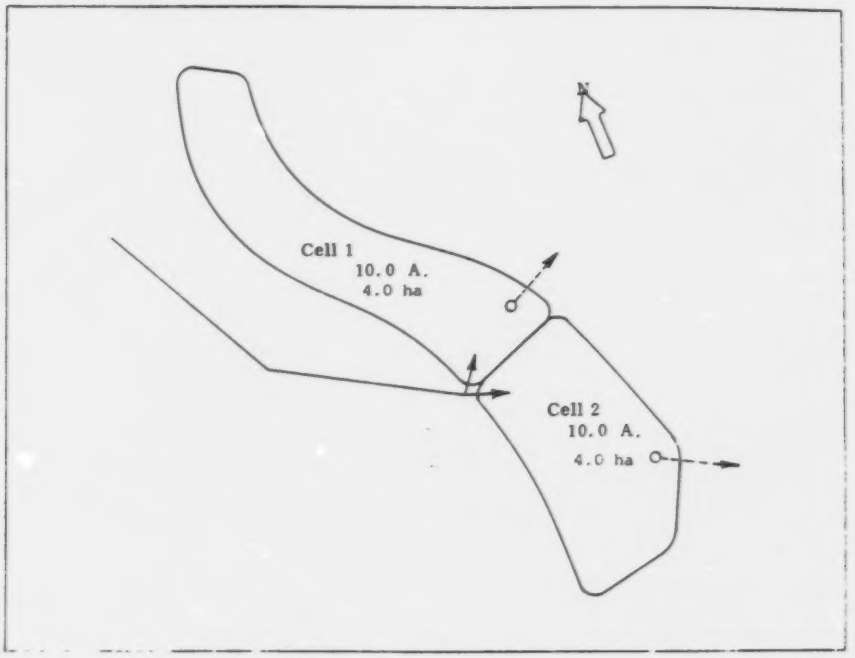
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 467 l gpm 35.4 l/s
Pump 2 : 467 l gpm 35.4 l/s

Total Cap : 467 l gpm
35.4 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110001337 WEST LORNE LAGOON

MUNICIPALITY WEST LORNE
REGION 01 SOUTHWESTERN

TREATMENT FACILITY CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION 1,256
POPULATION SERVED 1,283
PERCENT SERVED 102.1

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY 0.888 1000 M3 DESIGN BOD5 0.0 MG/L DESIGN SUSP.SOLIDS 0.0 MG/L

	<--- FLOW DATA --->				><-BIOCHEMICAL OXYGEN DEMAND-><				<--- SUSPENDED SOLIDS ---><---				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL TO W'COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	15 631	504	888		76.0				374.0				3.2			
FEB	12 759	456	856		50.0				34.0				6			
MAR	19 889	635	1 312		122.0				57.0				3.5			
APR	24 659	822	1 579	117 300	34.0	4.4	86		23.0	8.5	63		1.9	1.90		
MAY	20 031	646	1 054		38.0				24.0				2.1			
JUN	15 394	513	826		32.0				16.0				2.5			
JUL	14 733	475	693		88.0				67.0				3.9			
AUG	13 917	449	956		68.0				80.0				4.4			
SEP	13 035	435	585		124.0				112.0				5.2			
OCT	13 062	421	637		60.0				30.0				5.3			
NOV	15 476	516	897	91 900	60.0	3.6	94		64.0	30.8	51		3.6	4.80		
DEC	18 752	605	1 467		48.0				26.0				4.8			
TOTAL	197 138			209 200				10.3				11.0				0.4
AVERAGE		540			66.6	4.0	93		75.5	19.6	74		3.5	1.97		
MAXIMUM			1 579	117 300												
NO OF SAMPLES					13	9			13	9			12	6		

Waste Stabilization Pond

PROJECT : WIARTON

Cell Acreage : 5.0 + 5.0 + 5.0

Cell area : 2.0 + 2.0 + 2.0 ha

Total Acreage : 15.0

Total hectares : 6.0

Commenced Operation : May 1960

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : #1 & #3 parallel #2 in series

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

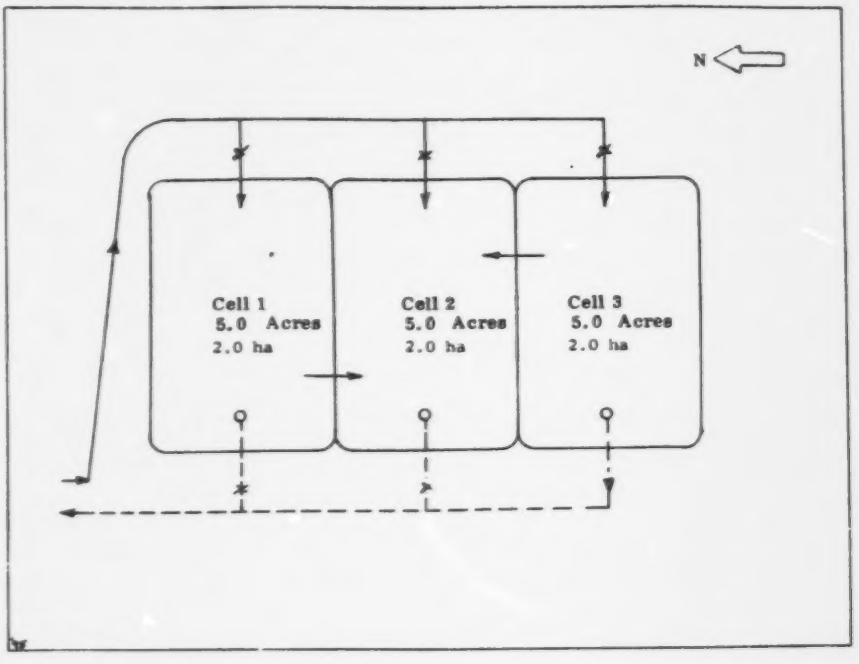
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 327 l gpm 24.8 l/s
Pump 2 : 327 l gpm 24.8 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110000819 WIARTON LAGOON — MUNICIPALITY : IARTON (C-D) — REGION : 01 SOUTHWESTERN

TREATMENT FACILITY CONVENTIONAL LAGOON (CONTINUOUS DISCHARGE) — * DATA NOT AVAILABLE

CURRENT POPULATION 2,060
POPULATION SERVED 1,550
PERCENT SERVED 75.2

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.681 1000 M3 — DESIGN BOD5 : 180.0 MG/L — DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	80.437	2.595	3.273		*	*			*	*			*	*		
FEB	54.825	1.958	2.328		200.0	19.0	90	9.9	235.0	8.0	97	12.5	4.4	2.4	45	110
MAR	101.017	3.259	3.423		44.0	*			38.0	*			1.5	*		
APR	76.545	2.551	2.619		40.0	23.6	41	1.2	23.0	30.0	-	-	2.5	1.4	43	.084
MAY	70.384	2.270	4.237		68.0	12.0	82	3.9	67.0	11.0	83	3.9	4.7	.5	87	.290
JUN	57.315	1.910	3.875		56.0	11.8	78	2.5	78.0	41.0	47	2.1	3.0	1.8	40	.089
JUL	37.505	1.210	2.430		88.0	20.2	78	2.4	102.0	65.0	36	1.3	6.1	1.5	75	.172
AUG	58.640	1.892	3.340		118.0	20.4	82	5.6	224.0	77.0	65	8.6	7.9	1.7	77	.361
SEP	44.155	1.472	2.170		58.0	15.6	73	1.6	61.0	56.0	8	.2	4.2	1.6	61	.115
OCT	56.800	1.832	2.123		88.0	14.0	84	4.2	107.0	77.0	28	1.7	7.5	1.6	78	.332
NOV	52.510	1.750	2.140		56.0	*			47.0	*			3.7	*		
DEC	111.525	3.597	4.280		26.0	11.2	56	1.6	26.0	20.0	23	6	2.2	1.6	26	.065
TOTAL	801.658							33.4				31.2				1.598
AVERAGE		2.191			76.1	18.4	78		91.6	42.5	53		4.3	1.5	62	
MAXIMUM			4.280													
NO. OF SAMPLES					12	10			12	10			12	10		

Waste Stabilization Pond

PROJECT : WINGHAM

Cell Acreage : 15 + 15

Cell area : 6.1 + 6.1 ha

Total Acreage : 30.0

Total hectares : 12.2

Commenced Operation : Nov. 1964

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

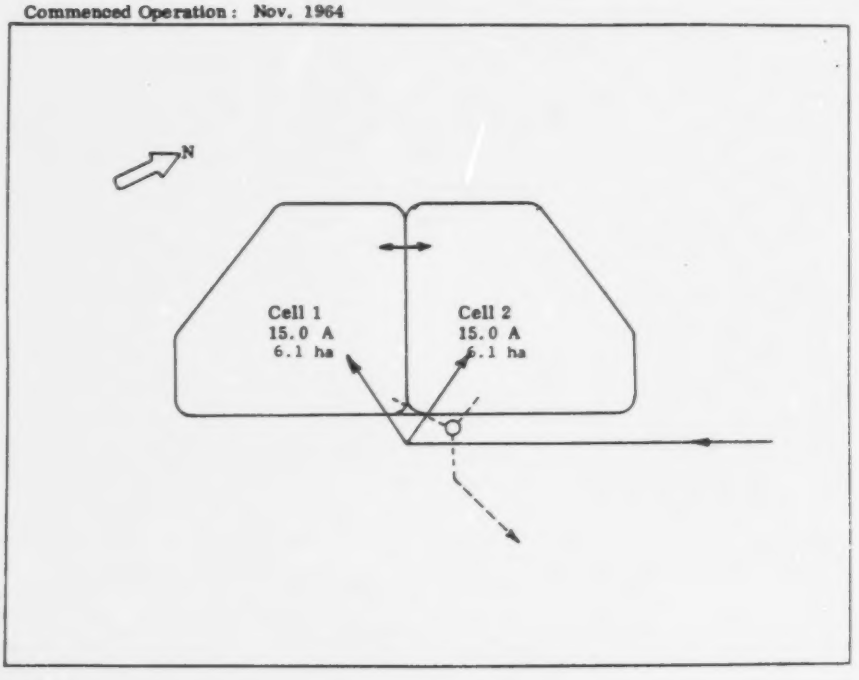
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 900 US gpm 56.8 l/s
Pump 2 : 900 US gpm 56.8 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110000828 WINGHAM LAGOON — MUNICIPALITY WINGHAM (C-D1) — REGION 01 SOUTHWESTERN

TREATMENT FACILITY CONVENTIONAL LAGOON (CONTINOUS DISCHARGE) — * DATA NOT AVAILABLE

CURRENT POPULATION 2,891
POPULATION SERVED 2,911
PERCENT SERVED 100.6

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1,363 1000 M3 — DESIGN BOD5 : 200.0 MG/L — DESIGN SUSP.SOLIDS : 200.0 MG/L

DATE	FLOW DATA: TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO W/COURSE 1000 M3	BIOCHEMICAL OXYGEN DEMAND: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	SUSPENDED SOLIDS: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	TOTAL PHOSPHORUS: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	86.083	2.777	3.841		79.0	16.0	79	5.4	89.0	9.0	89	6.8	3.7	2.9	21	069
FEB	106.063	3.788	4.169		*	*			*	*			*	*		
MAR	155.419	5.014	9.274		36.0	19.0	47	2.6	53.0	17.0	67	5.5	1.3	2.5	-	-
APR	203.010	6.770	11.180		68.0	7.6	88	12.2	53.0	4.2	92	9.9	3.5	1.0	72	526
MAY	55.420	1.790	2.290		140.0	40.0	71	5.5	56.0	6.5	88	2.7	4.5	2.0	53	134
JUN	73.830	2.460	2.810		*	*			*	*			*	*		
JUL	69.360	2.240	6.290		98.0	14.4	85	5.7	122.5	17.0	86	7.3	6.3	2.8	54	237
AUG	63.020	2.040	2.460		112.0	16.0	85	6.0	140.0	16.0	88	7.8	6.7	2.4	64	271
SEP	52.830	.881	2.710		122.0	11.2	90	5.8	185.0	22.0	88	8.6	6.0	2.8	53	169
OCT	67.321	2.172	3.608		116.0	3.2	97	7.5	89.0	5.0	94	5.6	4.5	3.2	28	088
NOV	79.900	2.663	4.182		34.0	9.0	73	1.9	26.0	10.5	59	1.2	2.5	2.0	20	040
DEC	108.971	3.515	7.422		88.0	5.2	94	9.0	67.0	1.0	98	7.1	5.8	.8	84	535
TOTAL	1121.227							62.1				62.9				2.(illegible)
AVERAGE		3.(illegible)			89.3	14.1	84		84.(illegible)	10.8	87		4.4	2.2	49	
MAXIMUM			11.180													
NO OF SAMPLES					13	14			13	14			13	14		

Waste Stabilization Pond

PROJECT : ZURICH

Cell Acreage : 6.5 + 6.5 Cell area : 2.6 + 2.6 ha

Total Acreage : 13.0 Total hectares : 5.2

Commenced Operation : Jan. 1974

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

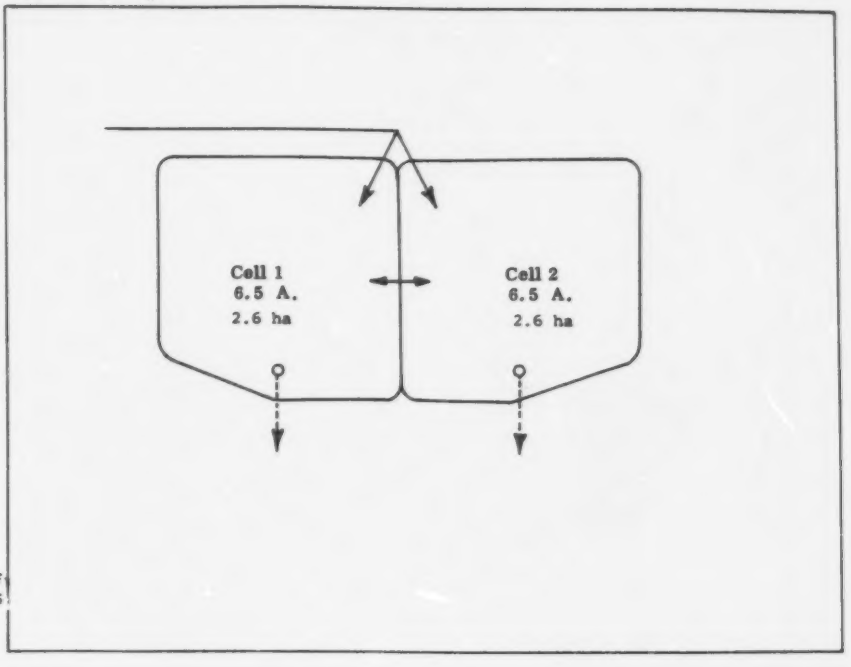
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 300 US gpm 18.9 l/s
Pump 2 : 300 US gpm 18.9 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001444 ZURICH LAGOON

MUNICIPALITY : ZURICH
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 779
POPULATION SERVED : 762
PERCENT SERVED : 97.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->									
						REDUCTION			REDUCTION			REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/78-DEC/78															
JAN	12.674	.409	.491		220.0				627.0							
FEB	10.242	.366	.527		155.0				131.0				9.5			
MAR	18.948	.611	2.200		*				*				*			
APR	14.542	.484	.838		106.0				293.0				5.6			
MAY	11.005	.355	.454		*				*				*			
JUN	9.951	.331	.690		*				*				*			
JUL	*	*			*				*				*			
AUG	*	*			*				*				*			
SEP	8.846	.294	.345		*				*				*			
OCT	10.592	.341	.440		*				*				*			
NOV	12.109	.403	.686		*				*				*			
DEC	*	*			*				*				*			
TOTAL	108.909															
AVERAGE		.399			160.3				350.3				7.5			
MAXIMUM			2.200													
NO. OF SAMPLES					3				3				2			

Ministry of the Environment
Ontario

West Central Region

②

REGIONAL OFFICE

STONEY CREEK
140 Centennial Pkwy. N.
416-561-7410

DISTRICT OFFICES

Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

West Central Region

Ministry of the Environment

Ontario

Waste Stabilization Pond

PROJECT : . ARTHUR

Cell Acreage : 4.85 + 4.85 + 7.19 + 11.8

Cell area: 2.0 + 2.0 + 2.9 + 4.8 ha

Total Acreage : 28.7

Total hectares: 11.7

Commenced Operation : (Cell 1 + Cell 2) : 1962
Expansion : (Cell 3) 1972
Expansion : (Cell 4) Nov 1975

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

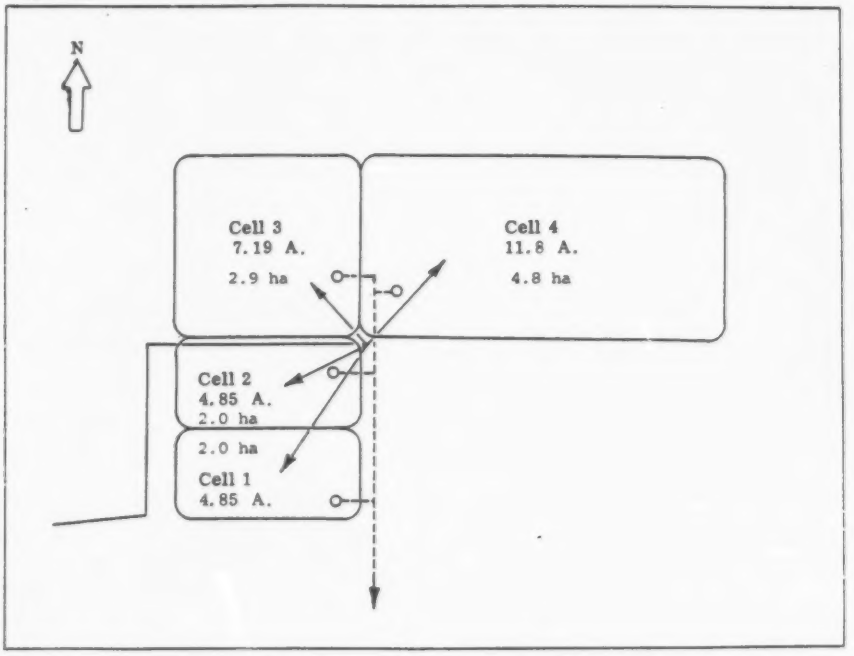
Flow Measurement :

- ☐ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 600 I gpm 45.4 l/s
Pump 2 : 600 I gpm 45.4 l/s

Total Cap : 900 I gpm (Est.)
68.1 l/s (est.)



Signifigant Industries : Bell Threads

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000882 ARTHUR LAGOON

MUNICIPALITY : ARTHUR
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,669
POPULATION SERVED : 150
PERCENT SERVED : 8.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.881 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	25.339	.817	1.205													
FEB	21.457	.766	1.240													
MAR	52.852	1.705	3.587													
APR	43.660	1.400		26.000	66.0				80.0				3.8			
MAY	31.130	1.000		26.680	80.0	14.0	82		55.0	21.0	61		2.5	.7	72	
JUN	22.000	.734			120.0				60.0							
JUL	15.910	.513														
AUG	17.750	.572			155.0				140.0				13.0			
SEP	17.290	.582			160.0				265.0				11.0			
OCT	22.795	.735		110.470	125.0	16.2	87		115.0	27.3	76			.9		
NOV	30.168	1.005		30.270	310.0	15.5	95		440.0	27.3	93		5.0	.7	85	
DEC	38.900	1.254			130.0				90.0				7.0			
TOTAL	339.249			193.420				43.4				43.4				2,103
AVERAGE		.924			143.2	15.2	89		153.1	25.2	83		7.0	.8	88	
MAXIMUM			3.587	110.470												
NO. OF SAMPLES					8	25			8	25			4	25		

Waste Stabilization Pond

PROJECT: DUNNVILLE (OSWEGO PARK)

Cell Acreage : 3.7

Total Acreage : 3.7

Cell Area : 1.5 ha

Total Hectares : 1.5 ha

Commenced Operation: May 1971

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- □ Continuous
- ■ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

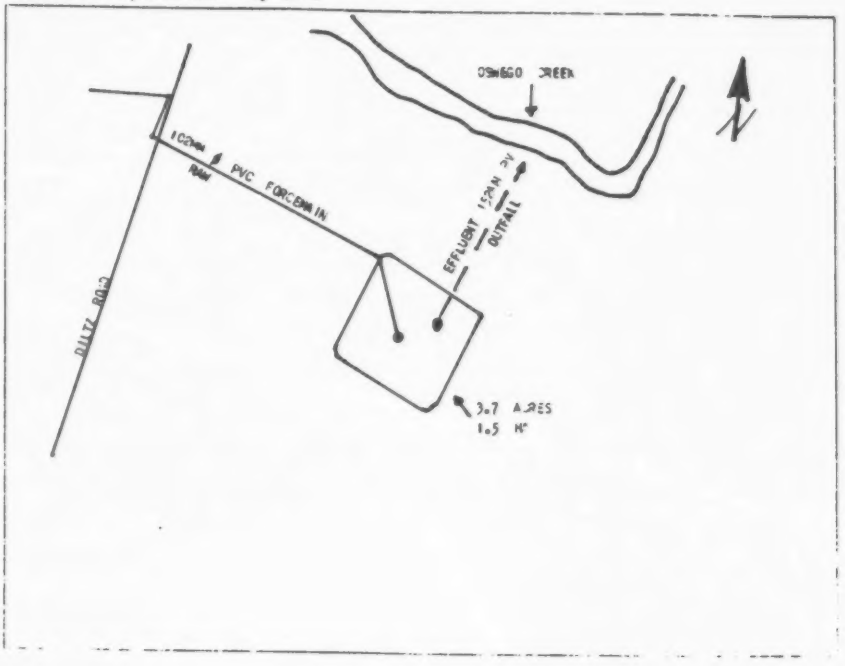
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1: 200 I gpm 15.14 l/s
Pump 2: 200 I gpm 15.14 l/s

Total Cap:



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110003068 OSWEGO PARK LAGOON (ACQUIRED APR.79)

MUNICIPALITY : DUNNVILLE (OSWEGO PARK)A
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 140
POPULATION SERVED : 250
PERCENT SERVED : 178.5

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.090 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN																
FEB																
MAR																
APR	7.620	.250	.360	12.354	80.0	38.4	52		95.0	31.5	66		5.7	3.6	36	
MAY	3.916	.126	.192		68.0				70.0				6.7			
JUN	4.829	.155	.356		190.0				240.0				170.0			
JUL	6.226	.200	.311		310.0				305.0				16.0			
AUG	2.110	.068	.135		390.0				1980.0				22.0			
SEP	1.681	.056	.062		145.0				165.0				11.0			
OCT	3.280	.106	.129		230.0				180.0				8.6			
NOV	3.790	.126	.148		40.0				70.0				5.5			
DEC	8.542	.275	.647		180.0				240.0				12.0			
TOTAL	41.994			12.354				6.0				14.1				1.040
AVERAGE		.151			181.4	38.4	78		389.4	31.5	91		28.6	3.6	87	
MAXIMUM			.647	12.354												
NO. OF SAMPLES					9				9				9	1		

Waste Stabilization Pond

PROJECT: HARRISTON

Cell Acreage: 10 + 10 + 8

Cell area: 4.0 + 4.0 + 3.2 ha

Total Acreage: 28

Total hectares: 11.2

Significant Industries: Canada Packers

Commenced Operation: 1965

Operation:

- ☐ Series
- ■ Parallel
- ☐ Other:

Discharge:

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other:

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

Flow Measurement:

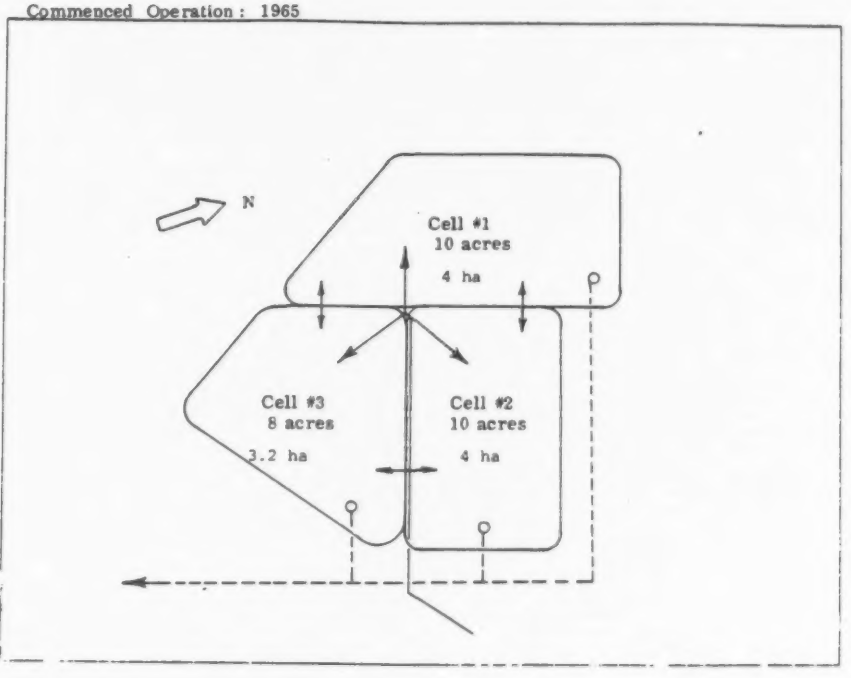
- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1: 480 US gpm 30.3 l/s

Pump 2: 480 US gpm 30.3 l/s

Total Cap: 960 US gpm 60.6 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110000329 HARRISTON LAGOON

MUNICIPALITY HARRISTON
REGION 02 WEST-CENTRAL

TREATMENT FACILITY: CONVENTIONAL LAGOON SEASONAL

* DATA NOT AVAILABLE

CURRENT POPULATION 1,954
POPULATION SERVED 1,950
PERCENT SERVED 99.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY: 0.895 1000 M3 DESIGN BOD5: 0.0 MG/L DESIGN SUSP.SOLIDS: 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	55.270	1.783	8.328													
FEB	34.181	1.103	1.659													
MAR	120.764	3.896	55.349													
APR	100.888	3.363		107.200	*	20.0			45.0	41.0	8		3.7	3.5	5	
MAY	50.417	1.626		98.200	390.0	34.0	91		275.0	75.0	72		16.0	3.3	79	
JUN	31.946	1.065														
JUL	26.285	.847			367.5				735.0				17.0			
AUG	29.647	.956			232.0				535.0				26.0			
SEP	26.863	.895			145.0				383.0				15.5			
OCT	35.185	1.135			140.0				404.0				18.2			
NOV	56.292	1.876		87.070	117.0	20.7	82		240.0	17.1	92		13.0	8.8	32	
DEC	78.209	2.522														
TOTAL	645.947			290.470				133.7				217.5				6.797
AVERAGE		1.756			231.9	24.9	89		373.8	44.3	88		15.6	5.2	66	
MAXIMUM			55.349	107.200												
NO. OF SAMPLES					17	19			18	19			18	19		

Waste Stabilization Pond

PROJECT : NANTICOKE (JARVIS)

Cell Acreage : 5 + 7

Cell area : 2.0 + 2.8 ha

Total Acreage : 12

Total hectares : 4.8 ha

Commenced Operation : 1967

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

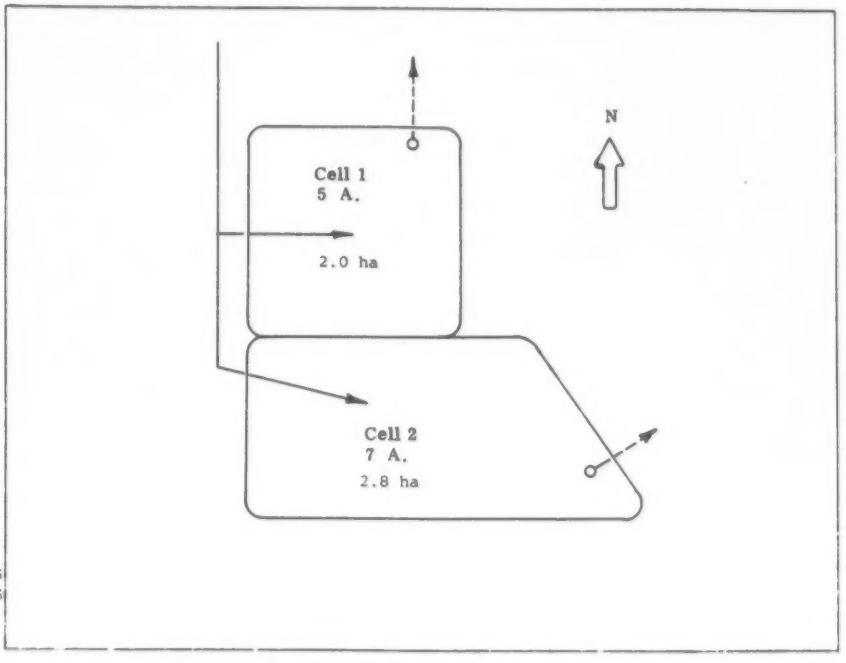
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 325 US gpm 20.5 l/s
Pump 2 : 325 US gpm 20.5 l/s

Total Cap : 650 US gpm
41.0 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 120001434 MANTICOKE (JARVIS)

MUNICIPALITY : NANTICOKE JARVIS
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 18,829
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 0.548 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->										
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION % 1000 KG
JAN/79-DEC/79															
JAN	26.576	.857	3.069		150.0				118.0				4.5		
FEB	24.589	.878	3.723		116.0				80.0				6.3		
MAR	33.286	1.074	1.800		84.0				94.0				4.6		
APR	31.903	1.063	2.127		58.0	14.0	75		63.0	16.0	74		3.0	.6	77
MAY	22.198	.716	.902		160 0	26.2	83		70.0	23.7	66		6.4	1.1	81
JUN	22.986	.766	1.470		310.0				480.0				15.8		
JUL	19.450	.627	.984		195.0				254.0				8.1		
AUG	16.974	.574	1.230		120.0				132.0				7.1		
SEP	20.388	.680	1.470		150.0				148.0				11.2		
OCT	24.164	.803	1.140		112.0	13.0	88		148.0	14.0	90		8.7	.5	93
NOV	19.872	.662	1.240		86.0				50.0				5.6		
DEC	30.730	.990	2.750												
TOTAL	293.116						75.8				38.3				1.934
AVERAGE		.808			140.0	17.7	87		148.8	17.9	87		7.3	.7	89
MAXIMUM			3.723												
NO. OF SAMPLES					11	25			11	25			11	25	

Waste Stabilization Pond

PROJECT : NORFOLK TWP
(PORT ROWAN)

Cell Acreage : 10 + 10

Cell area: 4.0 + 4.0 ha

Total Acreage : 20

Total hectares: 8.0

Commenced Operation: Dec. 1972

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

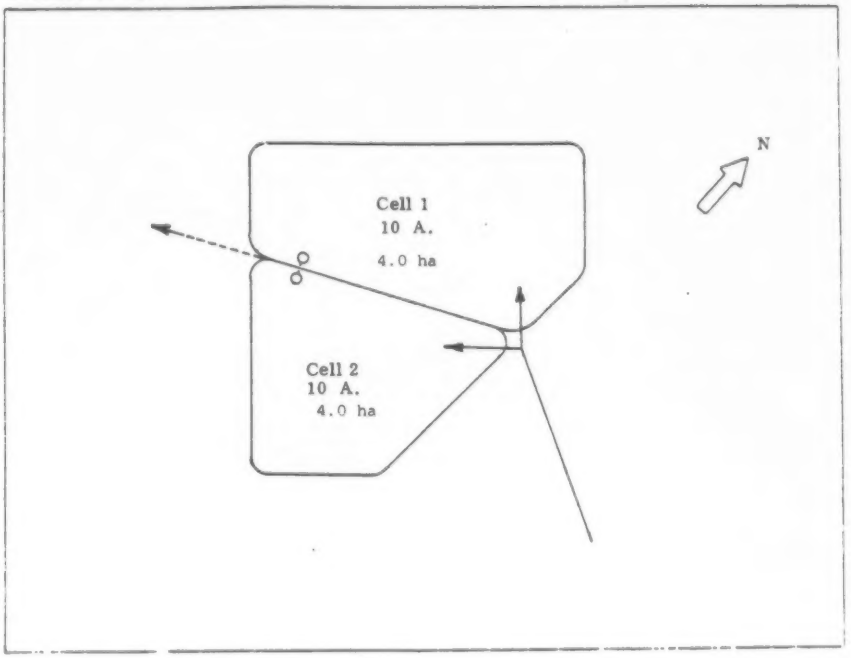
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 312 I gpm 23.6 l/s
Pump 2 : 312 I gpm 23.6 l/s

Total Cap : 600 I gpm
45.4 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110001113 PORT ROWAN LAGOON (DISCHARGE APR-MAY 79) MUNICIPALITY NORFOLK PORT ROWAN
REGION 02 WEST-CENTRAL

TREATMENT FACILITY CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION 10 980
POPULATION SERVED 750
PERCENT SERVED 6 8

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.727 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	% VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/79-DEC/79																
JAN	7.560	.244	.354													
FEB	7.451	.266	.450													
MAR	9.588	.309	.686													
APR	8.618	.287	.422		7.0	2.2	67		46.0	15.4	66		2.5	3	84	
MAY	7.237	.233	.309		*	3.0			*	32.5			*	2.3		
JUN	6.672	.222	.289													
JUL	7.486	.241	.314													
AUG	8.112	.261	.304													
SEP	7.933	.264	.324													
OCT	7.643	.246	.304		50.0				150.0				3.8			
NOV	7.862	.262	.400		78.0				130.0				4.4			
DEC	8.703	.280	.652													
TOTAL	94.945							4.0				8.0				0.701
AVERAGE		.260			45.0	2.6	94		108.6	23.9	77		3.5	1.3	62	
MAXIMUM			.886													
NO. OF SAMPLES					3	7			3	7			3	7		

Waste Stabilization Pond

PROJECT : SHELBURNE

Cell Acreage : 6.58 + 6.58

Cell area : 2.7 + 2.7 ha

Total Acreage : 13.16

Total hectares: 5.4

Commenced Operation : 1963

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

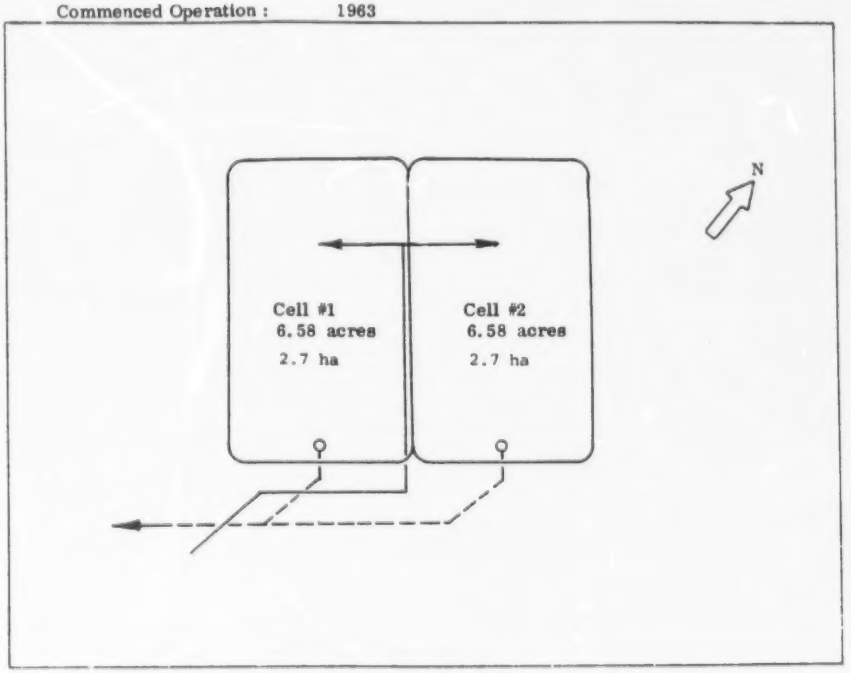
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : N/A
Pump 2 : N/A

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110000659 SHELBURNE LAGOON — MUNICIPALITY : SHELBURNE (C-D) REGION : 02 WEST-CENTRAL

TREATMENT FACILITY CONVENTIONAL LAGOON (CONTINUOUS DISCHARGE) — CURRENT POPULATION : 3,001 POPULATION SERVED : 4,000 PERCENT SERVED : 133.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.590 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
					INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	35.310	1.140		35.310	100.0	24.0	76	2.6	125.0	40.0	68	3.0	5.3	3.7	30	.056
FEB	24.520	.880		24.520	145.0	95.0	34	1.2	225.0	50.0	77	4.2	7.6	6.4	15	.029
MAR	74.800	2.410		74.800	67.5	40.5	40	2.0	70.0	22.5	67	3.5	3.3	4.0	-	-
APR	73.940	2.460		73.940	87.5	18.0	79	5.1	85.0	32.5	61	3.8	5.0	2.2	56	.207
MAY	65.660	2.120		65.660	80.0	32.0	60	3.1	85.0	40.0	52	2.9	6.5	2.7	58	.250
JUN	41.720	1.390		41.720	115.0	18.5	83	4.0	132.5	32.5	75	4.1	6.5	3.6	44	.121
JUL	30.940	1.000		30.940	120.0	17.0	85	3.1	120.0	50.0	58	2.1	6.9	3.3	52	.111
AUG	39.310	1.270		39.310	340.0	20.0	94	12.5		55.0			14.0	2.7	80	.444
SEP	26.460	.880		26.460	94.0	20.0	78	1.9	100.0	110.0	-	-	5.8	3.8	34	.053
OCT	34.030	1.100		34.030	265.0	24.0	90	8.2	450.0	75.0	83	12.7	12.0	2.6	78	.320
NOV	43.950	1.470		43.950	90.0	21.0	76	3.0	90.0	45.0	50	1.9	5.7	4.3	24	.062
DEC	62.580	2.020		62.580	92.0	18.0	82	4.7	110.0	43.0	60	4.1	6.0	4.0	33	.125
TOTAL	553.220			553.220				51.9				42.9				1.778
AVERAGE		1.512			133.0	28.8	78		144.7	49.6	65		7.0	3.6	48	
MAXIMUM				74.800												
NO. OF SAMPLES					18	18			17	18			18	17		

Ministry of the Environment
Ontario

Central Region

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REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386

Waste Stabilization Pond

PROJECT : BEETON

Cell Acreage : 6.0 + 8.8

Cell Area: 2.4 + 3.6 ha

Total Acreage : 14.8 Acres

Total hectares: 6.0

Commenced operation November 1968

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

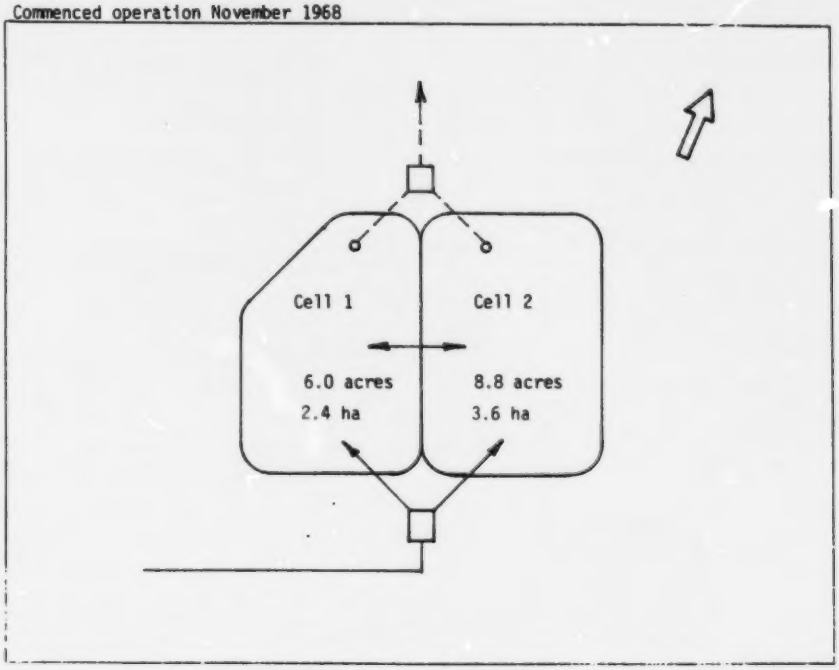
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 300 I gpm 22.7 l/s
Pump 2 : 300 I gpm 22.7 l/s

Total Cap : 420 I gpm



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000917 BEETON LAGOON NO DISCHARGE IN 79

MUNICIPALITY : BEETON
REGION : 03 CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL SERIES OPERATION

CURRENT POPULATION : 1,658
POPULATION SERVED : 1,260
PERCENT SERVED : 75.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.383 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	17.893	.577	.850		120.0				140.0				5.1			
FEB	15.888	.568	.723		360.0				270.0				11.0			
MAR	30.308	.977	1.255		90.0				130.0				54.0			
APR	31.180	1.075	1.473		70.0				100.0				3.6			
MAY	25.023	.807	.895		80.0				115.0				4.3			
JUN	19.100	.640	.800		115.0				195.0				8.4			
JUL	16.687	.538	.627		160.0				200.0				7.7			
AUG	18.122	.585	.680		115.0				1330.0				21.0			
SEP	18.212	.607	.736		131.0				262.0				8.0			
OCT	23.172	.722	.926		125.0				120.0				5.1			
NOV	28.859	.995	1.617		119.0				138.0				7.8			
DEC	32.562	1.050	2.546		95.0				145.0				9.2			
TOTAL	277.006															
AVERAGE		.762			131.6				262.0				12.1			
MAXIMUM			2.546													
NO. OF SAMPLES					14				14				13			

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Waste Stabilization Pond

PROJECT : HAVELOCK

Cell Acreage : 8.2 + 10.8

Total Acreage : 19.0

Cell Area: 3.3 + 4.4 ha

Total hectares: 7.7

Commenced Operation: OCT 1975

Operation :

- [x] Series
- [ ] Parallel
- [ ] Other :

Discharge :

- [x] Seasonal
- [ ] Continuous
- [ ] Annual
- [ ] Other :

Phosphorus Removal:

- [x] Batch
- [ ] Continuous
- [ ] None

Flow Measurement :

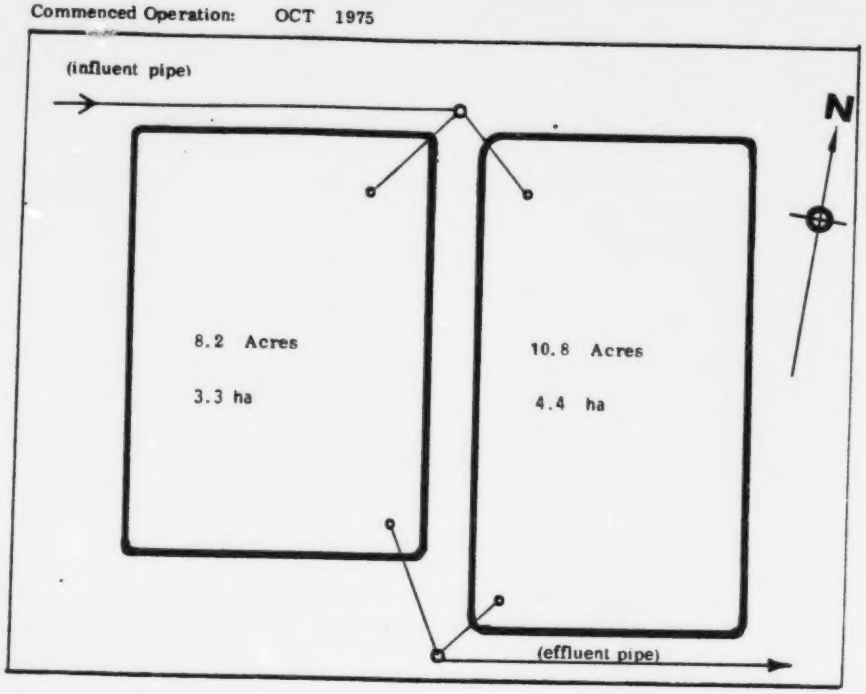
- [x] Flow Meter
- [ ] Integrator
- [ ] Pump Timer

Pumping Station

Pump 1 :

Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001765 HAVELOCK LAGOON

MUNICIPALITY HAVELOCK
REGION 03 CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION 1,236
POPULATION SERVED 1,257
PERCENT SERVED 101.6

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.880 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	BIOCHEMICAL OXYGEN DEMAND INFLUENT MG/L	BIOCHEMICAL OXYGEN DEMAND EFFLUENT MG/L	BIOCHEMICAL OXYGEN DEMAND REDUCTION %	BIOCHEMICAL OXYGEN DEMAND REDUCTION 1000 KG	SUSPENDED SOLIDS INFLUENT MG/L	SUSPENDED SOLIDS EFFLUENT MG/L	SUSPENDED SOLIDS REDUCTION %	SUSPENDED SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS REDUCTION %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	16.743	.541	.714		*				*				*			
FEB	15.470	.555	.650		*				*				*			
MAR	27.003	.868	1.173		*				*				*			
APR	28.770	.959	1.173		*				*				*			
MAY	22.402	.723	.850		*				*				*			
JUN	18.244	.608	.750		*				*				*			
JUL	17.078	.551	.659		*				*				*			
AUG	16.134	.520	.636		*				*				*			
SEP	14.675	.489	.580		*				*				*			
OCT	15.112	.487	.559		*				*				*			
NOV	15.040	.501	.550		*				*				*			
DEC	16.835	.543	.650		9.5				5.5				4.2			
TOTAL	223.506															
AVERAGE		.612			9.5				5.5				4.2			
MAXIMUM			1.173													
NO. OF SAMPLES					1				1				1			

Waste Stabilization Pond

PROJECT : LAKEFIELD

Cell Acreage : 20.0 + 18.0 Cell area: 8.1 + 7.3 ha

Total Acreage : 38.0 . . Total hectares: 15.4

Commenced Operation 1971

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

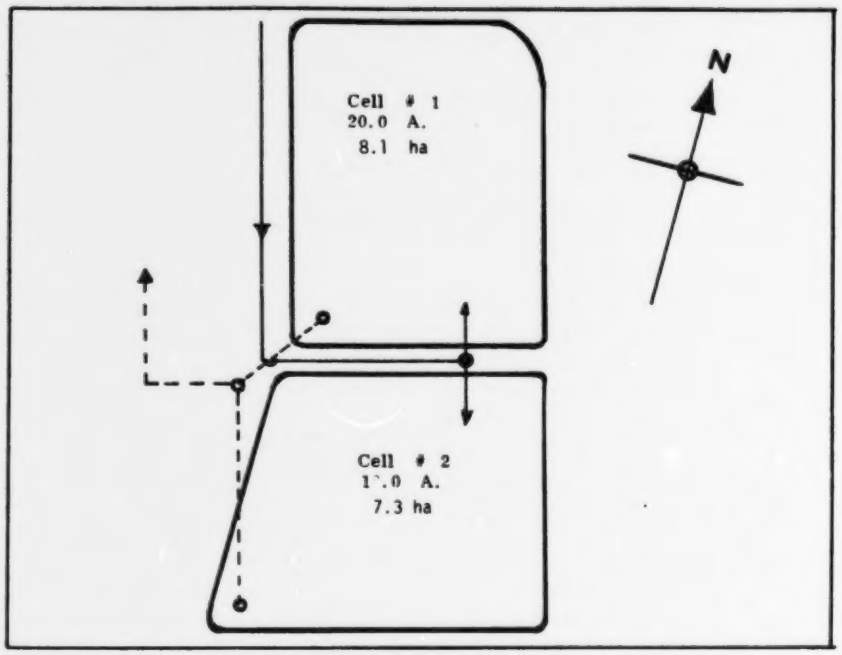
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 760 Igpm 57.5 l/s
Pump 2 : 760 Igpm 57.5 l/s

Total Capacity :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001462 LAKEFIELD LAGOON

MUNICIPALITY : LAKEFIELD
REGION : 03 CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,266
POPULATION SERVED : 2,177
PERCENT SERVED : 96.0

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.091 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	30.990	.996	2.055													
FEB	27.231	.973	1.746		280.0				1620.0				14.0			
MAR	60.589	1.955	3.096													
APR	55.472	1.849	2.440	2082.877	420.0	32.7	85		90.0	16.0	82		4.8	.8	82	
MAY	40.005	1.240	1.885		80.0				20.0				41.0			
JUN	27.636	.921	1.478													
JUL	23.931	.771	1.048													
AUG	25.836	.833	1.322		135.0				110.0				9.8			
SEP	24.995	.833	1.117		155.0				145.0				10.0			
OCT	29.028	.936	1.241		135.0				110.0				9.8			
NOV	34.056	1.135	1.710	131.653	130.0	12.0	90		120.0	27.5	77		7.6	1.4	81	
DEC	43.022	1.387	1.920		95.0				100.0				5.7			
TOTAL	422.791			2214.530				55.6				113.1				4.946
AVERAGE		1.152			153.7	22.3	85		289.3	21.7	92		12.8	1.1	91	
MAXIMUM			3.096	2082.877												
NO. OF SAMPLES					8	6			8	6			8	3		

Waste Stabilization Pond

PROJECT : OMEMEE

Cell Acreage : 9.0 + 9.0 Cell area: 3.6 + 3.6 ha

Total Acreage : 18.0 Total hectares 7.2

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other : Sprav Irrigation

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

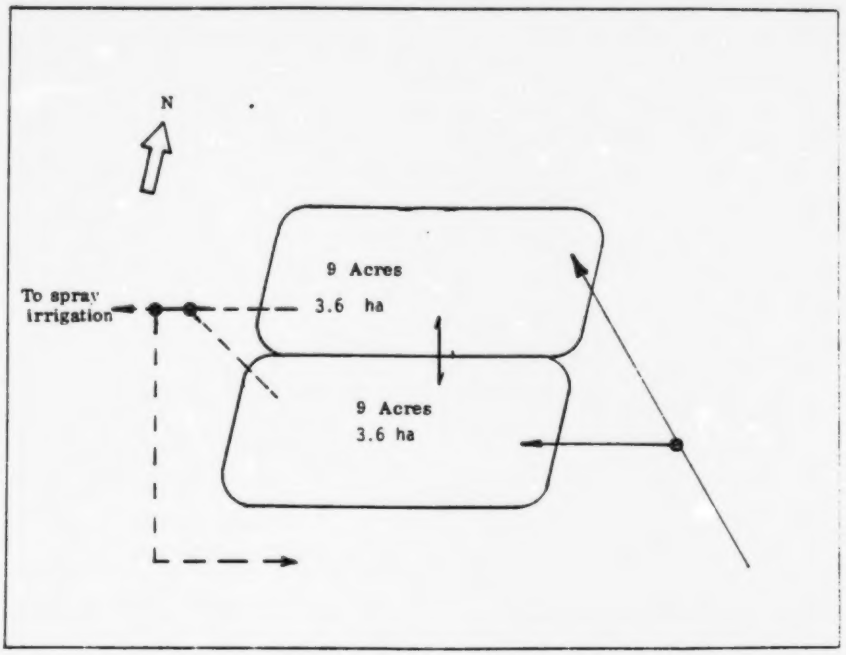
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT — REPORT DATE: 4 AUG 81

WORKS NUMBER 110001630 ONEMEE LAGOON — MUNICIPALITY ONEMEE (SPRAY)
REGION 03 CENTRAL

TREATMENT FACILITY CONVENTIONAL LAGOON SEASONAL AIR SPRAY PHOSPHORUS REMOVAL — CURRENT POPULATION 786; POPULATION SERVED 600; PERCENT SERVED 76.3

* DATA NOT AVAILABLE

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.813 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	4,685	.151			115.0				140.0				6.6			
FEB	4,045	.144	.150		210.0				225.0				9.8			
MAR	10,201	.329			95.0				185.0				6.5			
APR	9,196	.306	.361		56.0	19.0	66		105.0	25.0	76		5.2	3.1	40	
MAY	6,489	.209	.241		65.0	7.0	89		175.0	25.0	85		3.6	.3	90	
JUN	4,773	.159	.200		*	5.0			*	5.0			*	3.2		
JUL	3,664	.118	.159		90.0				120.0	5.0	95		5.7	1.4	75	
AUG	4,310	.140	.241		60.0	1.3	97		95.0	7.0	92		5.7			
SEP	3,900	.130	.191		125.0	10.0	92		190.0	3.0	98		7.2	.7	89	
OCT	4,614	.149	.200		130.0	2.0	98		210.0	5.0	97		11.0	1.1	90	
NOV	5,498	.183	.532		82.0	1.4	98		125.0	5	99		6.7	1.1	83	
DEC	8,306	.268	.518		100.0				220.0				6.6			
TOTAL	69,877							6.7				10.7				0.963
AVERAGE		.191			102.8	6.5	93		162.7	9.4	94		6.7	1.5	76	
MAXIMUM			.532													
NO. OF SAMPLES					11	7			11	8			11	7		

Southeastern Region
4

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Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Waste Stabilization Pond

PROJECT : ALFRED

Cell Acreage : 22.1 + 22.1 Cell area: 8.9 + 8.9 ha

Total Acreage : 44.2 Total hectares: 17.8

Commenced Operation : Nov. 1975

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

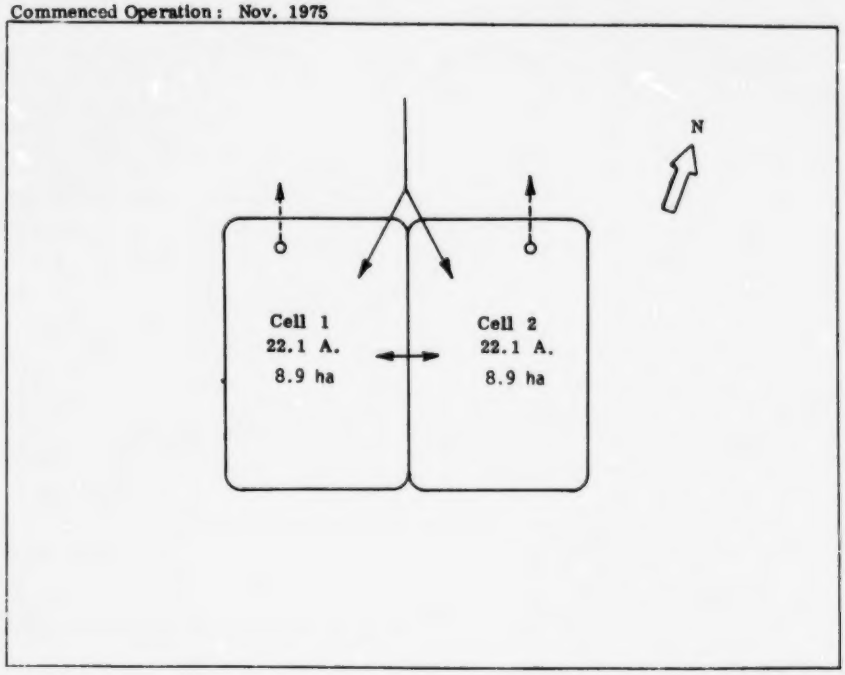
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 437 I gpm 33.1 l/s
Pump 2 : 437 I gpm 33.1 l/s

Total Cap : 699 I gpm
52.9 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001836 ALFRED LAGOON (NO DISCHARGE IN 79) MUNICIPALITY : ALFRED AD
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL CURRENT POPULATION : 1,100
POPULATION SERVED : 1,050
PERCENT SERVED : 95.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.713 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->									
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	13.620	.439	.573		188.0				218.0				9.5			
FEB	11.633	.415	.486		165.0				187.0				8.3			
MAR	20.371	.679	.873		153.0				158.0				6.4			
APR	18.735	.604	.845		66.0				58.0				5.0			
MAY	14.731	.475	.724		185.0				231.0				7.2			
JUN	15.026	.518	.735		91.0				98.0				6.3			
JUL	13.917	.448	.708		170.0				245.0				11.5			
AUG	14.507	.468	.765		120.0				150.0				8.1			
SEP	13.817	.460	.568		181.0				182.5				7.9			
OCT	19.305	.623	.905		112.5				207.5				6.2			
NOV	15.616	.521	.697		295.0				835.0				11.0			
DEC	14.792	.477	.877		157.5				152.5				10.2			
TOTAL	186.070															
AVERAGE		.511			157.0				225.2				8.1			
MAXIMUM			.905													
NO. OF SAMPLES					23				23				23			

Waste Stabilization Pond

PROJECT : CASSELMAN

Cell Acreage : 20.1 + 20.1

Cell Area : 8.13 + 8.13ha

Total Acreage : 40.2

Total Hectares : 16.26

Commenced Operation: November 1977

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

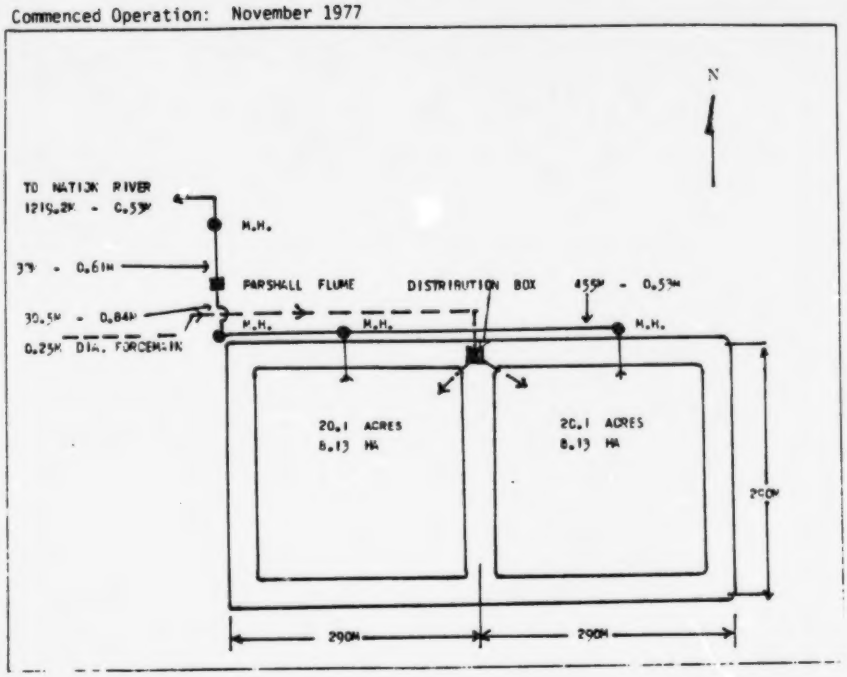
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1: 950 I gpm 72 l/s
Pump 2: 950 I gpm 72 l/s

Total Cap: 950 I gpm 72 l/s
(100% standby)



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002201 CASSELMAN LAGOON

MUNICIPALITY : CASSELMAN
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION 1,585
POPULATION SERVED 1,650
PERCENT SERVED 104 1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.383 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	13.524	.436	.591		143.3				130.7				8.2			
FEB	12.411	.443	.550		114.0				133.0				9.8			
MAR	22.639	.730	1.355		125.0				170.0				7.0			
APR	21.150	.705	1.250	125.840	66.0	12.0	81		88.0	13.2	85		4.1	1.5	61	
MAY	16.080	.520	.720	23.190	157.0	16.5	89		216.0	38.0	82		7.6	.9	88	
JUN	15.480	.520	.710		134.5				191.5				7.9			
JUL	13.200	.430	.620		110.7				178.3				9.5			
AUG	14.820	.480	.640		49.0				45.0				5.9			
SEP	17.980	.600	1.260		71.0				102.5				6.8			
OCT	19.090	.620	1.190	54.000	47.0	2.3	95		67.5	5.3	92		5.0	.7	84	
NOV	19.450	.650	1.070	107.300	75.0	2.0	97		115.0	5.0	95		5.2	.7	86	
DEC	20.430	659	.720		155.0				305.0				8.8			
TOTAL	206.234			310.330				19.7				25.7				1.278
AVERAGE		.566			103.9	8.2	92		145.2	15.3	89		7.1	.9	86	
MAXIMUM			1.355	125.840												
NO. OF SAMPLES					23	10			23	10			23	10		

Waste Stabilization Pond

PROJECT : CHESTERVILLE

Cell Acreage : 14.5 Cell area: 5.9 ha

Total Acreage : 14.5 Total hectares: 5.9

Commenced Operation : Nov. 1970

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

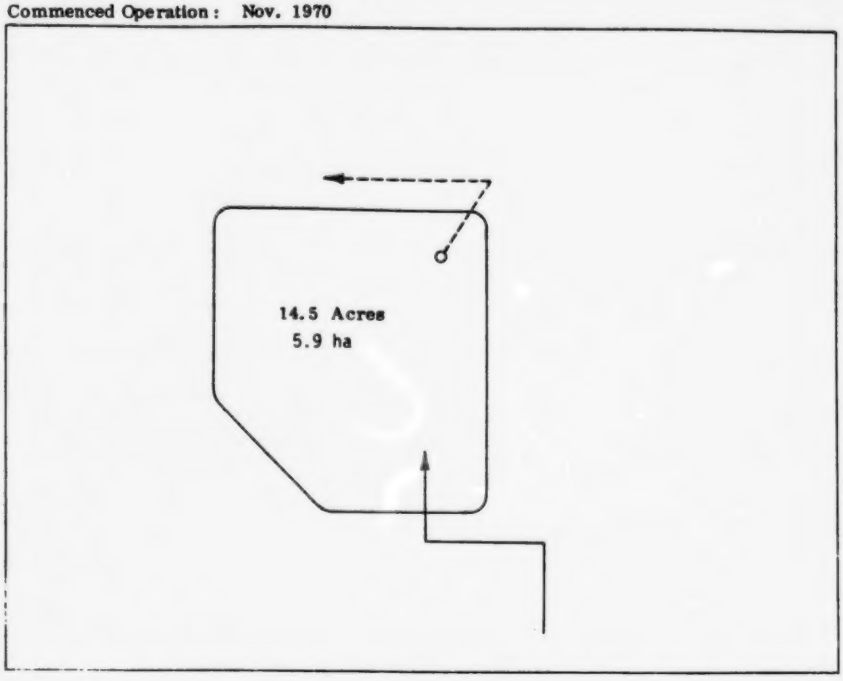
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 320 I gpm 24.2 l/s
Pump 2 : 320 I gpm 24.2 l/s

Total Cap : 430 I gpm
32.6 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000114 CHESTERVILLE LAGOON

MUNICIPALITY : CHESTERVILLE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 1,423
POPULATION SERVED : 1,400
PERCENT SERVED : 98.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.727 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	16.680	.540			84.5				74.5				7.3			
FEB	15.243	.544			95.0				73.0				63.0			
MAR	33.554	1.082			41.5				65.0				43.0			
APR	29.540	.985			48.0				60.0				4.0			
MAY	18.028	.582			60.0				60.0				4.5			
JUN	12.226	.408			85.0				65.0				5.0			
JUL	10.785	.348			29.5				100.0				8.6			
AUG	11.714	.378														
SEP	21.383	.712														
OCT	16.581	.534			57.0				70.0				4.9			
NOV	22.340	.744			47.0	5.0	89		40.0	19.5	51		3.2	4.8	-	
DEC	33.363	2.383														
TOTAL	241.437							13.4				11.5				2.580
AVERAGE		.770			60.8	5.0	91		67.5	19.5	71		15.9	4.8	69	
MAXIMUM																
NO. OF SAMPLES					15	2			15	2			15	2		

Waste Stabilization Pond

PROJECT : GOULBOURN TWP. (RICHMOND)

Cell Acreage : 11 + 12.5 + 12.5 Cell area: 4.4 + 5.1 + 5.1 ha

Total Acreage : 36.0 Total hectares: 14.6

Commenced Operation: May 1971

First Expansion: Added 12.5 acres May 1973 5.1 ha

Second Expansion : Added 12.5 acres Jan. 1975 5.1 ha

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

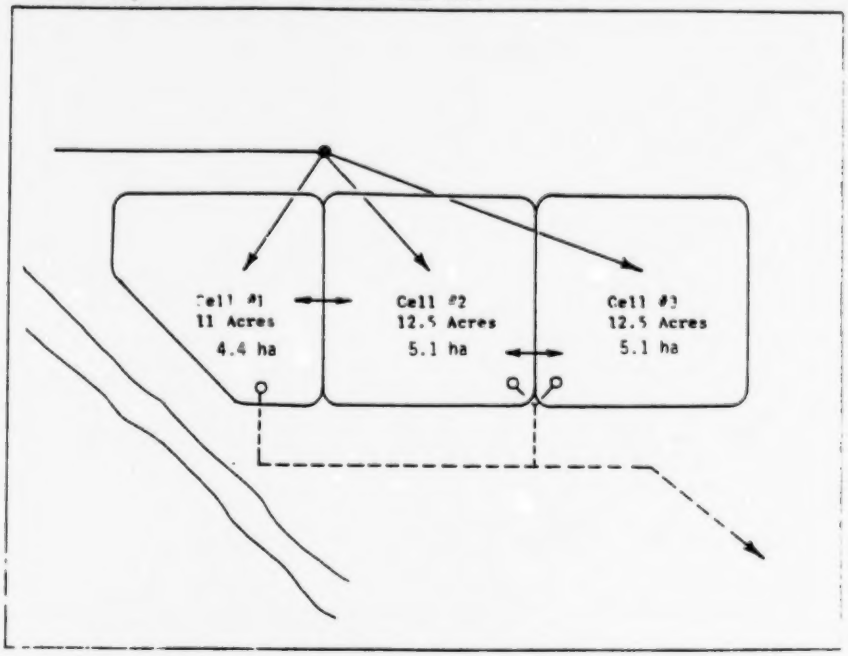
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 480 I gpm 36.3 l/s
Pump 2 : 480 I gpm 36.3 l/s

Total Cap : N/A



Signifigant Industries: NIL

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001140 RICHMOND LAGOON

MUNICIPALITY : GOULBOURN RICHMOND
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION 9,327
POPULATION SERVED 3,100
PERCENT SERVED 33.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1,400 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
							REDUCTION			REDUCTION			REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/78-DEC/78																
JAN	29.958	.966	1.318		93.0				78.0				6.4			
FEB	27.003	.964	1.137		70.0				60.0				6.6			
MAR	71.280	2.300	3.410	111.100	38.5	18.3	52		85.0	18.0	78		2.1	3.0	-	
APR	68.600	2.200	2.600	74.000	48.0	11.0	77		163.0	12.0	92		4.1	1.5	63	
MAY	68.800	2.210	2.600		125.5				145.0				6.5			
JUN	36.500	1.210	1.400		54.0				80.0				4.6			
JUL	25.980	.840	1.000		88.0				170.0				6.2			
AUG	26.010	.840	.910		82.6				86.0				5.2			
SEP	28.970	.970	1.350		190.0				297.5				10.5			
OCT	34.870	1.160	1.420	34.600	61.0	18.5	69		55.5	13.0	76		4.0	.8	80	
NOV	46.300	1.540	2.700	150.300	53.0	6.4	87		56.5	11.6	79		3.2	.9	71	
DEC	62.300	2.010	2.800		66.0				110.0				3.3			
TOTAL	526.571			370.000				35.4				53.6				1.9
AVERAGE		1.434			80.8	13.5	83		115.5	13.6	88		5.2	1.5	70	
MAXIMUM			3.410	150.300												
NO. OF SAMPLES					24	15			24	15			24	15		

Waste Stabilization Pond

PROJECT : LANCASTER

Cell Acreage : 17.1 + 8.9

Cell area: 6.9 + 3.6 ha

Total Acreage : 26

Total hectares: 10.5

Commenced Operation: December 1977

Operation :

- ■ Series
- ■ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

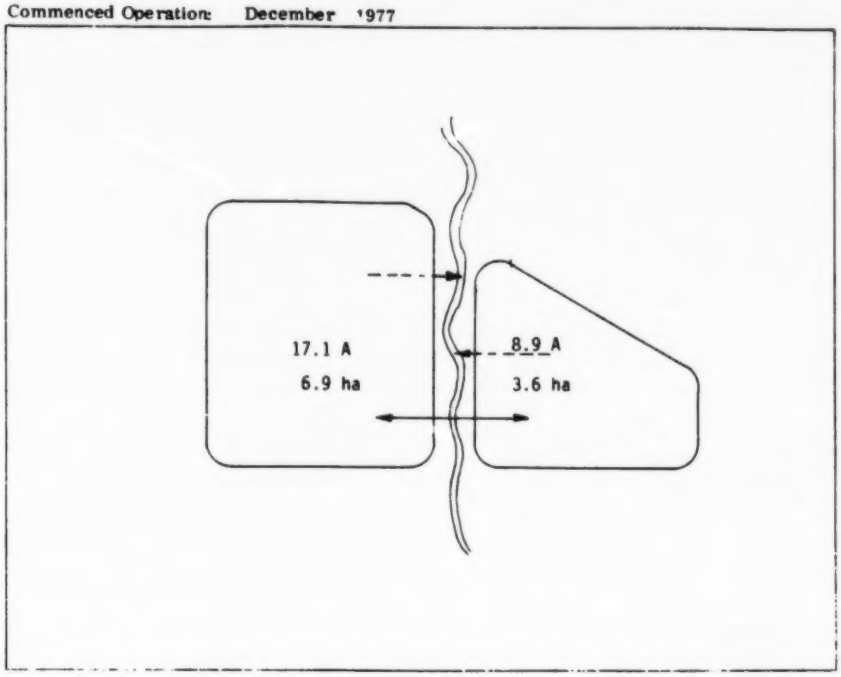
Flow Measurement :

- □ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001925 LANCASTER LAGOON

MUNICIPALITY : LANCASTER
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 587
POPULATION SERVED : 600
PERCENT SERVED : 102.2

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.590 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	11.651	.376	.423		41.0				74.5				3.7			
FEB	8.956	.320	.364		100.0				100.0				5.2			
MAR	23.394	.755	1.205		92.5				180.0				3.9			
APR	18.268	.609	.792		35.0	26.0	25		90.0	13.0	85		3.8	1.4	63	
MAY	14.029	.453	.582		60.0				65.0				5.8			
JUN	9.916	.331	.468		96.0				250.0				7.0			
JUL	9.295	.300	.362		305.0				620.0				14.0			
AUG	8.478	.273	.370		44.0				100.0				6.1			
SEP	12.761	.425	.798		155.0				650.0				6.0			
OCT	13.042	.421	.475		116.0				500.0				7.0			
NOV	13.070	.435	.608		160.0				175.0				6.7			
DEC	14.015	.452	.581		175.0				380.0				6.6			
TOTAL	156.875							13.9				39.6				0.7
AVERAGE		.429			114.9	26.0	77		265.3	13.0	95		6.3	1.4	77	
MAXIMUM			1.205													
NO. OF SAMPLES					15	2			15	2			15	2		

Waste Stabilization Pond

PROJECT : LEEDS & LANSDOWNE

Cell Acreage : 6.3 + 5.8 — Cell area: 2.5 + 2.3 ha

Total Acreage : 12.1 — Total hectares: 4.8

Commenced Operation: January 1977

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other : Spray Irrigation

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

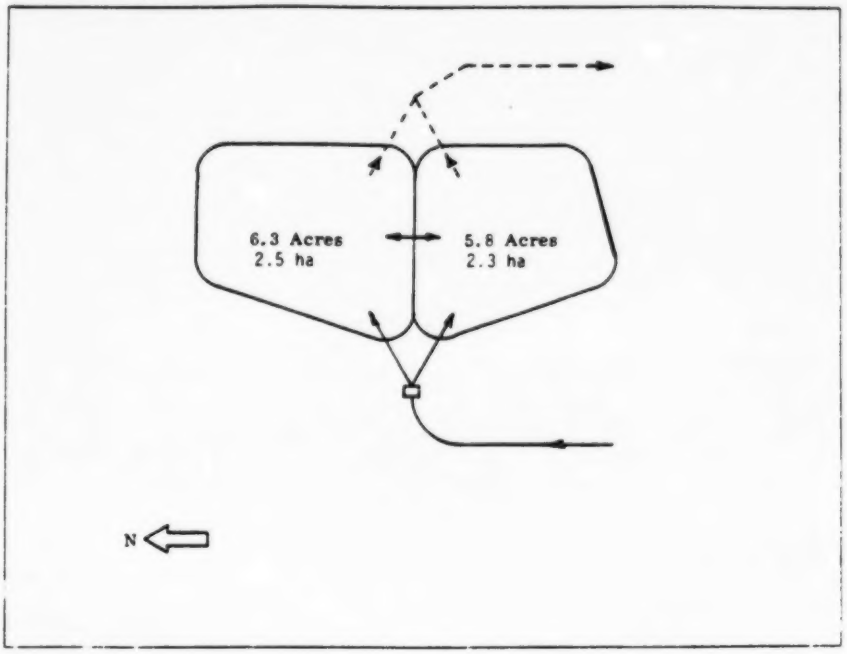
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 235 Igpm 17.8 l/s
Pump 2 : 235 Igpm 17.8 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110001934 LANSDOWNE LAGOON — MUNICIPALITY LEEDS & LANSDOWNE(SPRAY) — REGION 04 SOUTHEASTERN

TREATMENT FACILITY CONVENTIONAL LAGOON SEASONAL — * DATA NOT AVAILABLE — CURRENT POPULATION 600 — POPULATION SERVED 600 — PERCENT SERVED 100.0

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.500 1000 M3 — DESIGN BOD5 : 0.0 MG/L — DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->									
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	3.009	.097	.127		170.0				205.0				10.0			
FEB	2.850	.102	.205		110.0				125.0				8.6			
MAR	5.023	.162	.304		*				*				*			
APR	4.330	.144	.217		70.0				45.0				6.0			
MAY	3.398	.110	.131		*				*				*			
JUN	2.815	.094	.111		*				*				*			
JUL	2.685	087	.107	3.158	*	5.3			*	4.5			*	2.3		
AUG	2.750	.089	.113	.083	135.0				120.0				7.6			
SEP	3.196	.107	.312	1.303	115.0				90.0				9.6			
OCT	3.469	.112	.186		104.0				140.0				6.7			
NOV	3.737	.125	.216		*				*				*			
DEC	3.581	.116	.162		105.0				85.0				8.4			
TOTAL	40.843			4.544				4.5				4.5				0.236
AVERAGE		.112			115.5	5.3	95		115.7	4.5	96		8.1	2.3	71	
MAXIMUM			.312	3.158												
NO. OF SAMPLES					7	2			7	2			7	2		

Waste Stabilization Pond

PROJECT : MADOC

Cell Acreage : 15 + 15

Total Acreage : 30

Cell area: 6.1 + 6.1 ha

Total hectares: 12.2

Commenced Operation : Sept. 1972

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

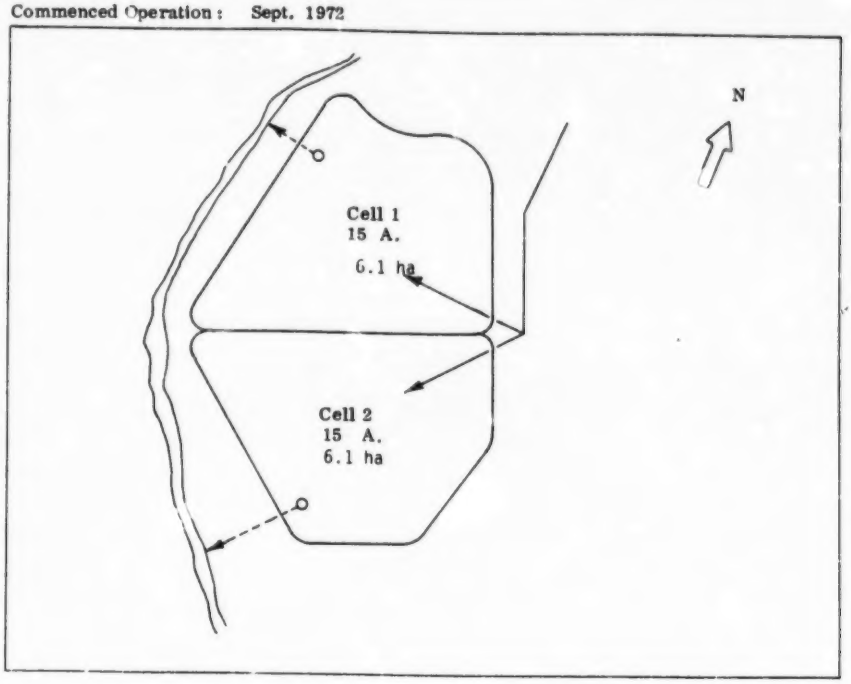
Flow Measurement :

- ■ Flow Meter (Parshall Flume)
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 : (GRAVITY FLOW)

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001051 MADOC LAGOON

MUNICIPALITY : MADOC
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,240
POPULATION SERVED : 2,600
PERCENT SERVED : 209.6

* DATA NOT AVAILABLE

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.383 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	22.293	.719			32.0				68.0				4.0			
FEB	29.435	1.051			60.0				52.0				3.0			
MAR	61.959	1.998			22.0				90.0				2.1			
APR	1.117	.037			13.0	10.5	19		40.0	22.5	43		1.4			
MAY	25.936	.837			58.0				180.0				8.1			
JUN	*	*			*				*				*			
JUL	8.292	.267			96.0				145.0				6.4			
AUG	9.540	.307			64.0				75.0				4.5			
SEP	9.867	.318			155.0	15.0	90		157.0	19.0	87		9.1	1.7	81	
OCT	11.457	.370			118.0	8.0	93		85.0	35.0	58		4.9	.7	85	
NOV	12.989	.432			185.0				100.0				6.3			
DEC	35.424	1.142			85.5				120.0				6.3			
TOTAL	228.309							12.5				13.6				0.666
AVERAGE		.680			80.7	11.1	86		101.0	25.5	74		4.9	1.2	75	
MAXIMUM																
NO. OF SAMPLES					14	4			14	4			14	2		

Waste Stabilization Pond

PROJECT : PLANTAGENET

Cell Acreage : 17 Acres
Cell area: 6.8 ha

Total Acreage : 17 Acres
Total hectares: 6.8

Commenced Operation: Spring 1977

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

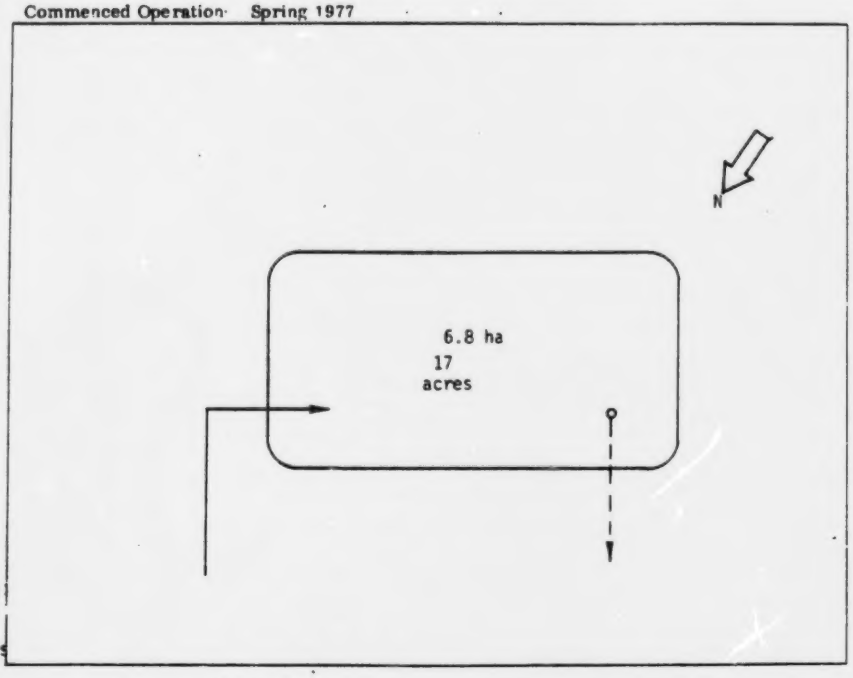
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 430 I gpm 32.6 l/s
Pump 2 : 430 I gpm 32.6 l/s

Total Cap : 860 I gpm 65.1 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001621 PLANTAGENET LAGOON

MUNICIPALITY : PLANTAGENET
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 949
POPULATION SERVED : 950
PERCENT SERVED : 100.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.718 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
					INFLUENT	EFFLUENT		REDUCTION	INFLUENT	EFFLUENT		REDUCTION	INFLUENT	EFFLUENT		REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/79-DEC/79																
JAN	14.856	.479	.768		110.0				302.0				7.2			
FEB	13.061	.466	.600		85.0				55.5				4.6			
MAR	40.932	1.320	3.255		86.0				242.5				2.8			
APR	25.324	.816	1.769		62.0				252.5				3.6			
MAY	13.918	.448	.583		87.0				77.0				6.5			
JUN	12.778	.425	.549		87.0				262.5				7.4			
JUL	12.054	.388	.580		57.0				72.5				42.2			
AUG	10.390	.335	.685		112.0				115.0				6.1			
SEP	14.450	.482	.822		69.0				120.0				7.9			
OCT	16.816	.542	1.646		102.0				117.5				6.4			
NOV	17.001	.567	1.069		91.0	5.4	94		85.0	20.4	76		5.4	2.4	55	
DEC	16.881	.545	1.011		60.5				42.0				4.4			
TOTAL	208.461							11.3				26.0				1.913
AVERAGE		.568			84.0	5.4	93		145.3	20.4	85		8.7	2.4	72	
MAXIMUM			3.255													
NO. OF SAMPLES					24	11			24	11			24	11		

Waste Stabilization Pond

PROJECT : ROCKLAND

Cell Acreage : 19.8 Cell area: 8.0 ha

Total Acreage : 19.8 Total hectares: 8.0

Commenced Operation : 1964

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

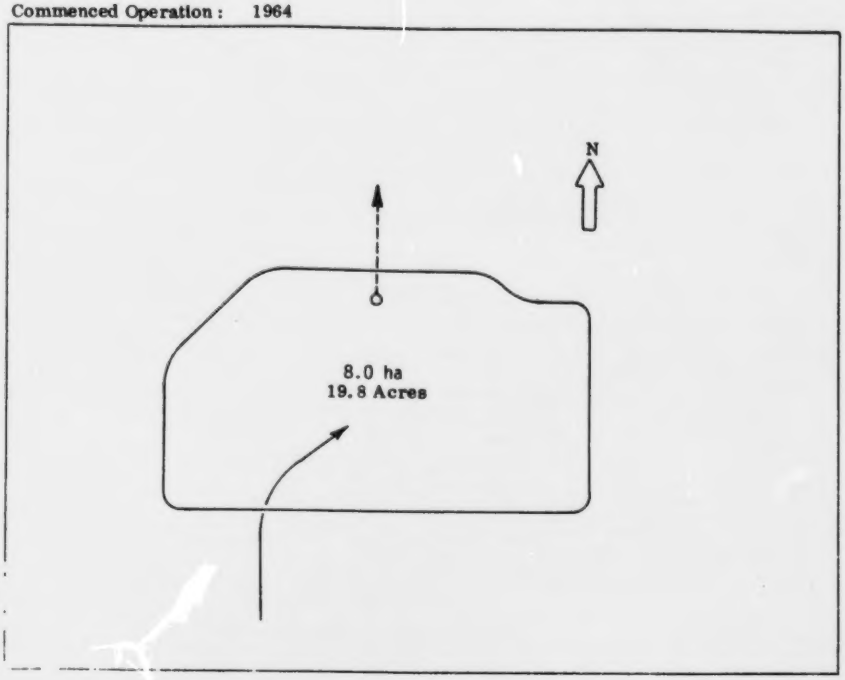
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 693.65 I gpm 52.5 l/s
Pump 2 : 657.10 I gpm 49.7 l/s

Total Cap : 1050 I gpm 81.8 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001159 ROCKLAND LAGOON

MUNICIPALITY : ROCKLAND
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 4,040
POPULATION SERVED : 1,250
PERCENT SERVED : 30.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	28.576	.922	1.141		59.0				70.0				5.4			
FEB	27.121	.969	1.155		53.0				44.0				6.2			
MAR	61.962	1.999	3.350		54.0				70.0				3.6			
APR	58.212	1.904	3.408		33.0				45.0				3.2			
MAY	33.324	1.074	1.261		26.2				32.0				3.8			
JUN	25.277	.871	1.160		30.5				32.7				20.3			
JUL	25.080	.808	1.372		46.7				53.2				4.7			
AUG	24.268	.837	1.048		95.5				110.0				6.6			
SEP	34.980	1.166	1.890		52.6				89.7				5.7			
OCT	32.566	1.086	1.535		45.7				87.0				5.0			
NOV	40.303	1.343	2.091		63.7	11.0	82		56.0	14.7	73		5.7	3.4	40	
DEC	36.773	1.226	2.070		44.7				48.7				4.8			
TOTAL	428.442							16.3				19.3				1.199
AVERAGE		1.184			50.3	11.0	78		59.8	14.7	75		6.2	3.4	45	
MAXIMUM			3.408													
NO. OF SAMPLES					41	10			41	10			41	10		

Waste Stabilization Pond

PROJECT : RUSSELL TOWNSHIP

Cell Acreage :

Total Acreage :

Commenced Operation: August 1979

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

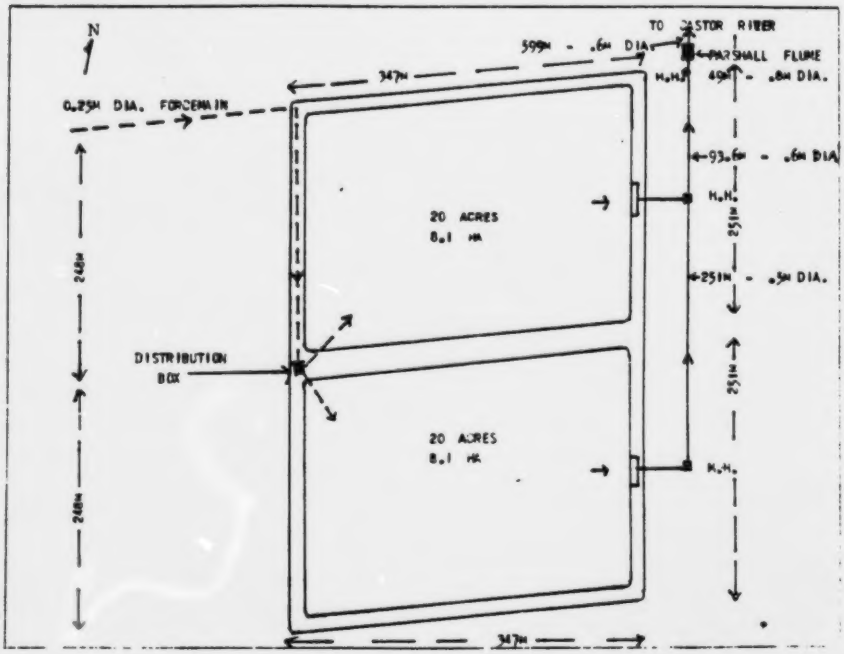
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1: 720 I gpm 54.5 l/s
Pump 2: 720 I gpm 54.5 l/s

Total Cap: 720 Igpm 54.5 l/s
(100% standby)



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001514 RUSSELL P.V. LAGOON (START JUL 79) (NO DISCHARGE IN 79)

MUNICIPALITY : RUSSELL
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL
PHOSPHORUS REMOVAL
PHOSPHORUS REMOVAL

CURRENT POPULATION : 5,380
POPULATION SERVED : 800
PERCENT SERVED : 14.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.772 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG
JAN/79-DEC/79																
JAN																
FEB																
MAR																
APR																
MAY																
JUN																
JUL																
AUG	.463	.015	.040		33.0				37.0				3.4			
SEP	1.511	.050	.324		78.0				57.5				14.9			
OCT	1.533	.049	.085		162.5				170.0				8.3			
NOV	2.146	.072	.101		680.0				1810.0				10.6			
DEC	3.082	.099	.134		262.5				385.0				8.7			
TOTAL	8.735															
AVERAGE		.057			243.2				491.9				9.1			
MAXIMUM			.324													
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : ST. ISIDORE DE PRESCOTT

Cell Acreage : 12.6 + 9.5 + 12.3

Cell Area : 5.1 + 3.8 + 5.0 ha

Total Acreage : 34.4

Total Hectares : 13.9

Commenced Operation : June 1977

Operation :

- Series
- ■ Parallel
- □ Other :

Discharge :

- Seasonal
- □ Continuous
- ■ Annual
- □ Other :

Phosphorus Removal:

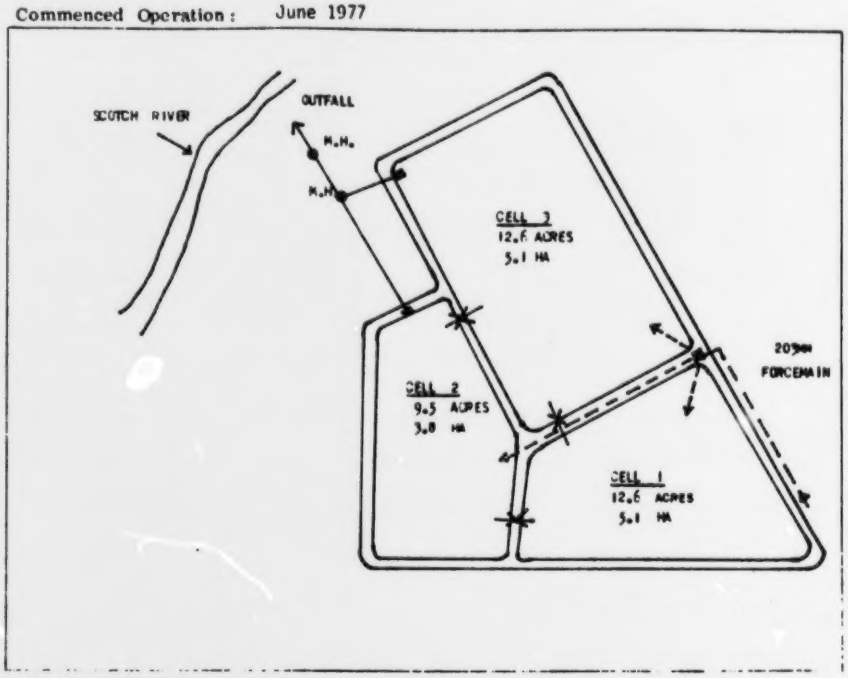
- □ Batch
- □ Continuous
- ■ None

Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1: 400 I gpm 30.3 l/s
Pump 2: 400 I gpm 30.3 l/s
Total Cap: 400 I gpm 30.3 l/s
(100% standby)



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110002210 ST. ISIDORE LAGOON (NO DISCHARGE IN 78)

MUNICIPALITY : ST. ISIDORE DE PRESCOTT
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 743
POPULATION SERVED : 750
PERCENT SERVED : 100.9

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.654 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
							REDUCTION			REDUCTION			REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/78-DEC/78															
JAN	5 205	168	.286		400.0				337.0				17.7			
FEB	4 637	.150	.214		235.0				208.0				12.7			
MAR	8 547	.276	.650		88.0				77.5				6.2			
APR	6.958	232	.555		752.5				386.5				12.6			
MAY	5 850	.190	.290		120.0				167.5				9.0			
JUN	5 390	.180	.300		235.0				473.5				45.0			
JUL	5 030	.160	.230		184.7				251.3				18.0			
AUG	5 220	.170	.210		262.5				247.5				10.0			
SEP	6.000	200	.290		135.0				90.0				6.7			
OCT	6 670	.220	.340		154.5				105.0				7.8			
NOV	6 680	220	.330		103.0				80.0				6.3			
DEC	6 700	.216	.250		91.0				335.0				9.1			
TOTAL	72.887															
AVERAGE		.199			186.7				229.9				13.4			
MAXIMUM			650													
NO. OF SAMPLES					25				25				25			

Waste Stabilization Pond

PROJECT : STIRLING

Cell Acreage : 7.0 + 5.6 Cell area: 2.8 + 2.3 ha

Total Acreage : 12.6 Acres Total hectares: 5.1

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

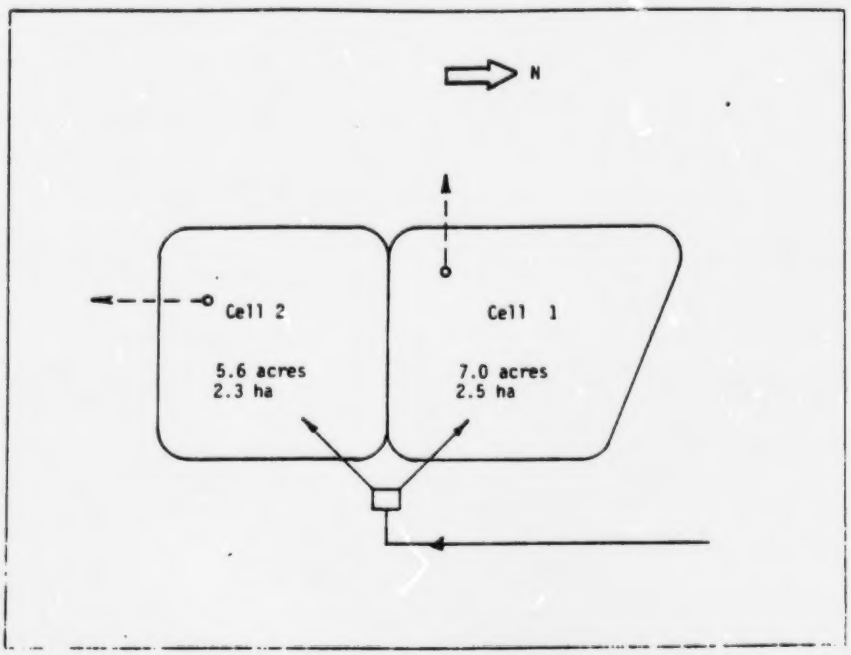
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 350 I gpm 26.5 l/s
Pump 2 : 350 I gpm 26.5 l/s

Total Cap : 700 I gpm 53.0 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110000686 STIRLING LAGOON

MUNICIPALITY STIRLING
REGION 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION 1,556
POPULATION SERVED 2,100
PERCENT SERVED 134 9

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.136 1000 M3 DESIGN BOD5 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	18.093	.584														
FEB	21.330	.688														
MAR																
APR																
MAY																
JUN																
JUL																
AUG																
SEP																
OCT																
NOV																
DEC																
TOTAL	39 423															
AVERAGE		.636														
MAXIMUM																
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : TWEED

Cell Acreage : 15.6 + 15.2 Cell Area: 6.3 + 6.2 ha

Total Acreage : 30.8 Ac. Total hectares: 12.5

Commenced Operation : Mar. 1976

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

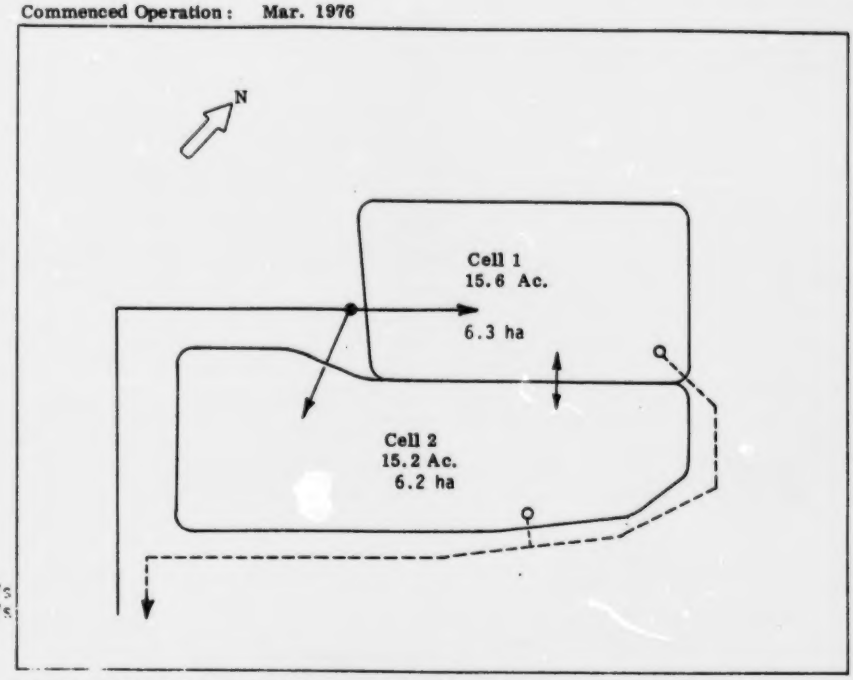
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 750 I gpm 56.8 l/s
Pump 2 : 750 I gpm 56.8 l/s

Total Cap : 750 I gpm
56.8 l/s



Signifigant Industries : Tweed Veneers, Tweed Steel Works, Sawyer Stoll Lumber, Lakewood Forest Products, Rashotte Lumber .

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 120000952 TWEED LAGOON

MUNICIPALITY : TWEED
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 1,632
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 1.209 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	52.270	1.686		106.013												
FEB	38.946	1.391		61.389												
MAR																
APR																
MAY																
JUN																
JUL																
AUG																
SEP																
OCT																
NOV																
DEC																
TOTAL	91.216			167.402												
AVERAGE		1.539														
MAXIMUM				106.013												
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : VANKLEEK HILL

Cell Acreage : 10 + 10 + 10

Total Acreage : 30 Acres

Cell Area: 4.0 + 4.0 + 4.0 ha

Total hectares: 12.0

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

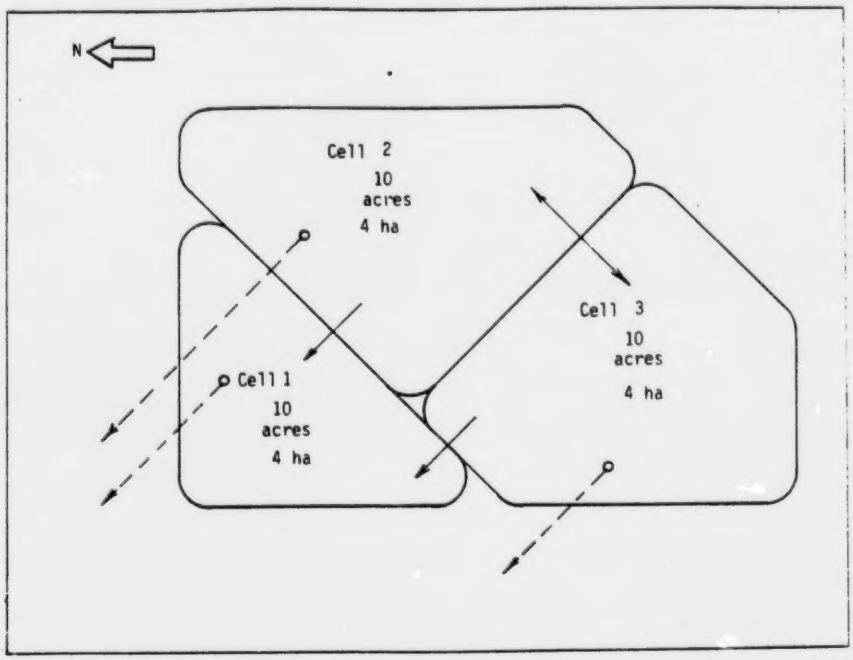
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 404 I gpm 54.5 l/s
Pump 2 : 404 I gpm 54.5 l/s

Total Cap : 610 I gpm 56.2 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001658 VANKLEEK HILL LAGOON

MUNICIPALITY : VANKLEEK HILL
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION . 1,634
POPULATION SERVED 1,650
PERCENT SERVED 100 9

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	17.438	.581	.581		145.0				243.0				12.4			
FEB	14.715	.525	.568		245.0				443.0				17.0			
MAR	32.443	1.047	2.408	41.680	82.0	16.0	80		85.0	15.0	82		5.5	2.7	50	
APR	31.963	1.065	3.590	20.000	84.0	3.0	96		178.0	10.0	94		4.0	.3	92	
MAY	17.964	.579	.765		105.0				135.0				8.0			
JUN	15.447	.515	.691		113.0				121.0				6.8			
JUL	13.742	.443	.621		270.0				340.0				15.0			
AUG	16.109	.520	.974		120.0				245.0				4.8			
SEP	22.104	.737	.651		170.0				185.0				9.6			
OCT	18.850	.608	.704		145.0				90.0				5.2			
NOV	18.403	.635			230.0	10.0	95		830.0	40.0	95		6.5	1.5	76	
DEC	21.225	.685	1.097		135.0				115.0				8.6			
TOTAL	240.403			61.680				34.6				55.1				1.70
AVERAGE		.662			153.6	9.6	93		250.8	21.6	91		8.6	1.5	82	
MAXIMUM			3.590	41.680												
NO. OF SAMPLES					19	11			20	11			20	11		

Waste Stabilization Pond

PROJECT : WESTPORT

Cell Acreage : 7 Acres

Total Acreage : 7 Acres

Cell area: 2.8 ha

Total hectares: 2.8

Commenced Operation: Feb. 1974

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

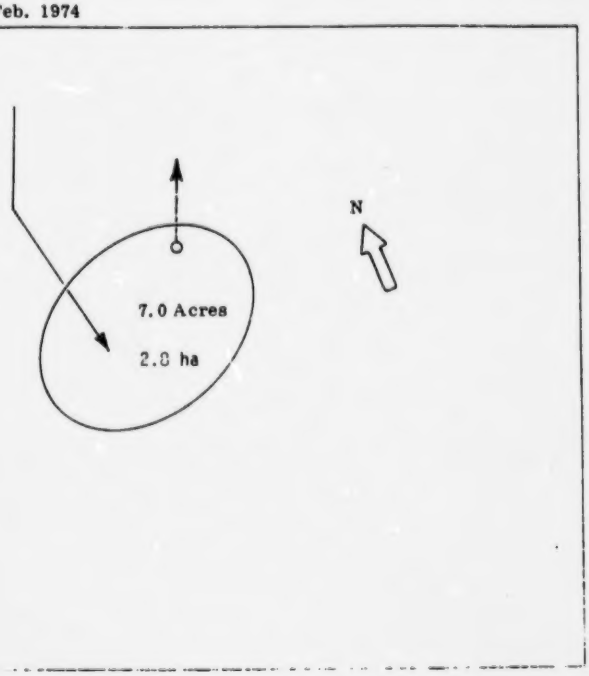
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 300 I gpm 22.7 l/s
Pump 2 : 300 I gpm 22.7 l/s

Total Flow : 350 I gpm
26.5 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001550 WESTPORT LAGOON

MUNICIPALITY : WESTPORT
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 686
POPULATION SERVED : 600
PERCENT SERVED : 87.4

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.327 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	6.649	.214	.314		65.0				70.0				5.4			
FEB	7.055	.252	.414		40.0				56.0				3.4			
MAR	10.006	.323	.459													
APR	8.877	.296	.409	37.500	14.0	14.0			12.0	12.6	-		2.2	.7	68	
MAY	7.495	.242	.295	7.500	56.0	32.3	42		36.0	33.0	8		3.7	.9	75	
JUN	6.398	.213	.265													
JUL	6.421	.207	.262													
AUG	7.020	.226	.304		170.0				170.0				8.4			
SEP	6.391	.213	.234		55.0				60.0				4.6			
OCT	5.971	.193	.300		84.0				95.0				6.5			
NOV	6.444	.215	.288	35.571	*	2.3			*	7.1			*	.3		
DEC	8.117	.262	.360		33.0				40.0				2.8			
TOTAL	86.844			80.571				4.2				4.2				2.45
AVERAGE		.238			64.6	16.2	74		67.3	17.5	73		4.6	.6	86	
MAXIMUM			.459	37.500												
NO. OF SAMPLES					7	18			7	17			8	18		

Waste Stabilization Pond

PROJECT WINCHESTER

Cell Acreage : 7.7 + 9.0 Cell area: 3.1 + 3.6 ha

Total Acreage : .7 Total hectares: 6.7

Commenced Operation : (7.7 Acre Cell) : 1960
Second Cell Added (9.0 Acre Cell) : 1971

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

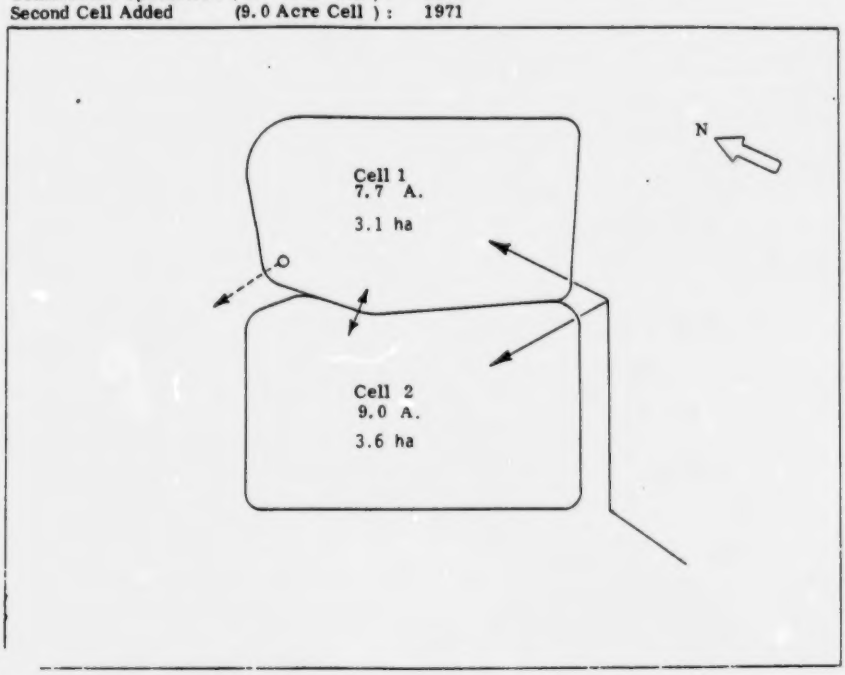
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 480 US gpm 30.3 l/s
Pump 2 : 480 US gpm 30.3 l/s

Total Cap : 460 US gpm 29.0 l/s



Signifigant Industry : 130 Bed Hospital

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001202 WINCHESTER LAGOON

MUNICIPALITY WINCHESTER
REGION 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

* DATA NOT AVAILABLE

CURRENT POPULATION 1,866
POPULATION SERVED 1,850
PERCENT SERVED 99.1

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

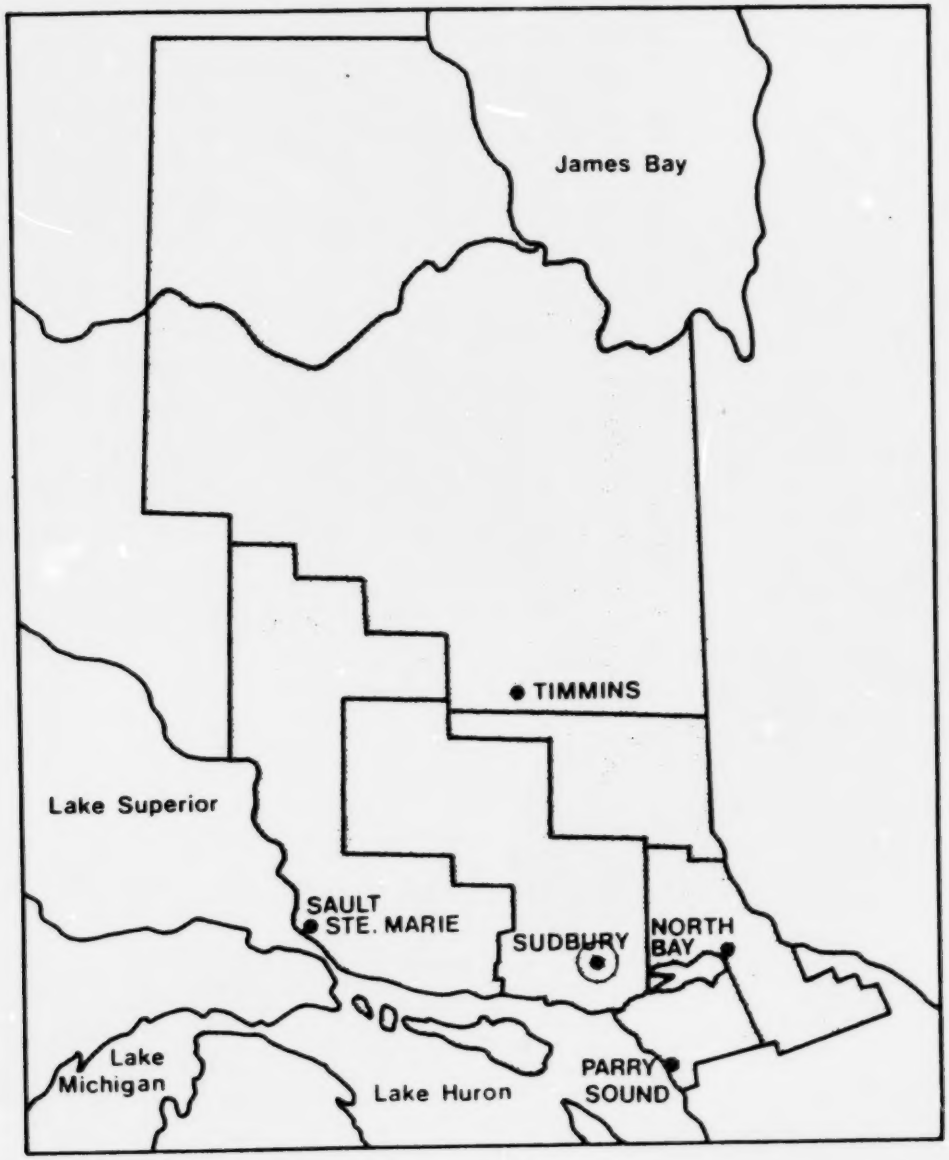
	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	18.957	.611			189.0				205.0				9.5			
FEB	16.552	.591			130.0				170.0				8.8			
MAR	40.132	1.294			60.5				102.5				3.5			
APR	34.370	1.150			68.0	19.0	72		158.0	18.0	88		5.5	3.9	29	
MAY	27.455	.886			101.0				97.0				5.4			
JUN	16.169	.539			96.0				107.0				8.1			
JUL	18.310	.591			18.0				60.0				8.8			
AUG	26.662	.888														
SEP	21.217	.684														
OCT	25.803	.832			95.0	5.0	94		172.0				7.4			
NOV	26.593	.886			97.0	9.5	90		172.0	12.5	92		7.3	4.6	36	
DEC	30.713	.990			*	2.0			*	30.0			*	3.3		
TOTAL	302.933							25.4				35.7				0.456
AVERAGE		.829			92.7	8.8	90		138.1	20.1	85		7.1	3.9	44	
MAXIMUM																
NO. OF SAMPLES					14	7			14	6			14	6		

Northeastern Region

5

Ministry of the Environment

Ontario



Ministry of the Environment
Ontario

Northeastern Region

5

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

Sault Ste. Marie
445 Albert St. E.
705-949-4640

Timmins
83 Algonquin Blvd. W.
705-264-9474

Parry Sound
74 Church St.
705-746-2139

Waste Stabilization Pond

PROJECT : (MANITOWANING)
ASSIGINACK

Cell Acreage : 3.8 + 3.8 Cell Area: 1.5 + 1.5 ha

Total Acreage : 7.6 Acres Total hectares: 5.0

Commenced Operation: February 1970

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

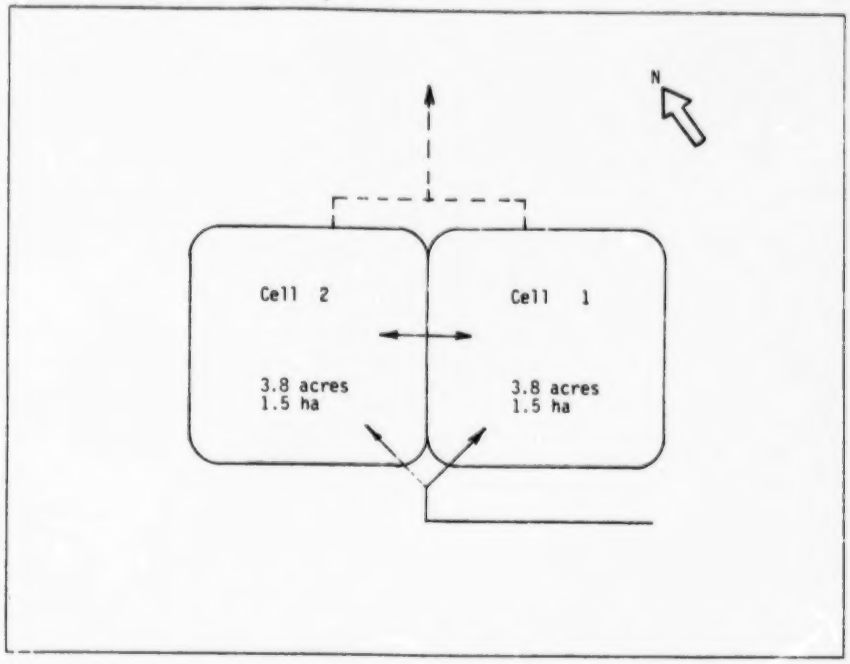
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 720 I gpm 30.6 l/s
Pump 2 : 720 I gpm 30.6 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110001408 MANITOWANING LAGOON

MUNICIPALITY : ASSIGINACK(MANITOWANING)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 880
POPULATION SERVED : 440
PERCENT SERVED : 51.1

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.545 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	5.864	.191	245		123.5				182.5				6.8			
FEB	5.973	.213	.373		115.0				110.0				7.2			
MAR	17.352	.559	1.136		75.0				95.0				3.0			
APR	16.100	.537	.662	18.184	102.5	7.0	93		115.0	18.0	84		6.2	1.4	77	
MAY	10.147	.327	.627		81.0				116.5				5.5			
JUN	5.747	.192	.237		84.0				138.0				8.2			
JUL	5.747	.185	.236		150.0				102.5				9.3			
AUG	6.338	.204	.420		29.5				32.2				3.3			
SEP	4.587	.153	.238		40.0				77.5				3.9			
OCT	5.593	.180	.221	9.738	27.0	12.5	53		35.0	55.0	-		2.4	1.0	56	
NOV	8.255	.275	.510	9.738	110.5	2.0	98		192.5	12.5	93		1.9	1.9		
DEC	9.594	.309	.406		76.0				63.5				4.6			
TOTAL	101.297			37.660				[illegible]				7.7				0.273
AVERAGE		.277			84.5	7.1	91		105.0	28.5	72		5.1	1.4	72	
MAXIMUM			1.136	18.184												
NO. OF SAMPLES					25	16			25	16			25	16		

Waste Stabilization Pond

PROJECT : BLACK RIVER MATHESON (RAMORE lagoon)

Cell Acreage : 3.8 Cell area: 1.5 ha

Total Acreage : 3.8 Total hectares: 1.5

Commenced operation: April 1962

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

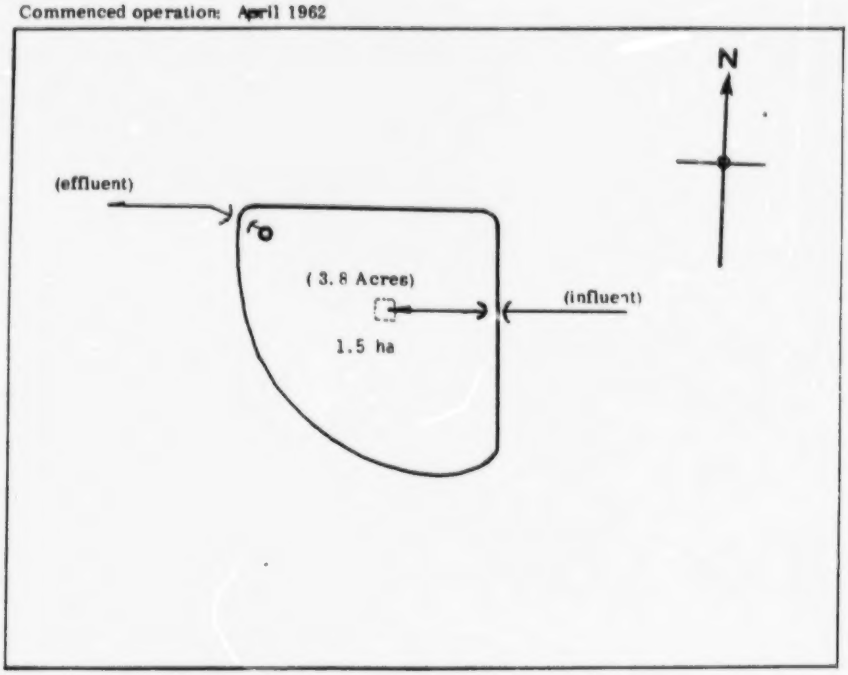
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 120 lgpm 9.1 l/s
Pump 2 : 120 lgpm 9.1 l/s

Total Cap : 130 lgpm 9.1 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001104 RAMORE LAGOON — MUNICIPALITY BLACK R MATHESON (C-D) — REGION 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON (CONTINUOUS DISCHARGE) — CURRENT POPULATION 3,567 — POPULATION SERVED 320 — PERCENT SERVED 8.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.122 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	2.521	.081		2.520	195.0	85.0	56	.2	325.0	84.0	74	.6	10.9	7.3	33	.009
FEB	2.041	.072		2.041	150.0	82.5	45	.1	188.0	65.0	65	.2	11.3	8.5	24	.006
MAR	4.096	.136		4.097	102.0	58.0	43	.1	197.0	47.0	76	.6	49.0	6.4	86	.174
APR	9.165	.305		9.165	50.0	38.0	24	.1	70.0	90.0	-	-	4.5	2.2	51	.001
MAY	4.785	.159		4.785	107.0				155.0				8.0			
JUN	5.366	.178		13.200	117.0	12.5	89	.5	300.0	42.0	79	.8	4.8	1.2	73	.019
JUL	3.830	.124			40.0				120.0				7.6			
AUG	3.960	.128			38.0				70.0				4.6			
SEP	3.651	.120		1.270	79.0	13.0	83	.2	97.0	19.0	80	.2	7.1	2.5	64	.017
OCT	5.840	.188		9.734	57.0	16.0	71	.2	97.0	10.0	89	.5	7.0	2.8	60	.025
NOV	5.229	.174		2.600	104.0				187.0				7.8			
DEC	3.774	.120		3.774	115.0	11.0	90	.3	365.0	12.0	96	1.3	7.5	3.0	60	.017
TOTAL	54.258			53.186				2.1				4.4				.286
AVERAGE		.149			96.1	41.1	62		172.5	46.1	76		10.8	4.2	58	
MAXIMUM				13.200												
NO. OF SAMPLES					21	12			21	12			21	12		

Waste Stabilization Pond

PROJECT : BLACK RIVER - MATHESON
(VAL GAGNE)

Cell Acreage : 5

Total Acreage : 5 acres

Cell area: 2.0 ha

Total hectares: 2.0

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

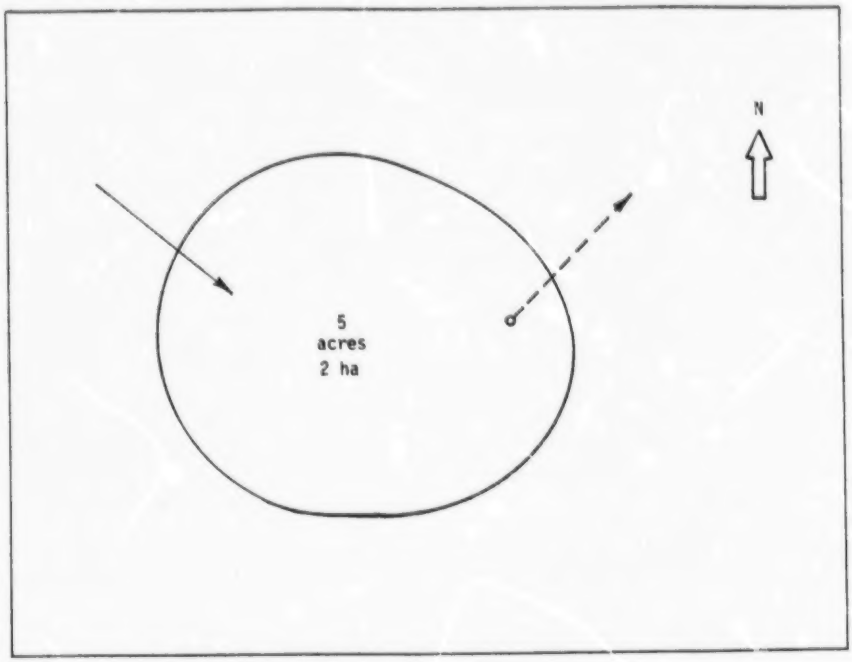
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 120001559 VAL GAGNE LAGOON S A 1 CELL

MUNICIPALITY : BLACK R. MATHESON (V.G.)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 3,798
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 0.227 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

<--- FLOW DATA ---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	(NO DATA AVAILABLE)				15.0	12.0	20		27.0	15.0	44		3.1	3.5	-	
FEB					18.0	20.0	-		20.0	13.0	35		3.4	3.9	-	
MAR					95.0	16.0	83		115.0	24.0	79		5.5	4.9	10	
APR					36.0	8.5	76		70.0	15.0	78		4.4	1.9	56	
MAY					34.0	5.3	84		30.0	8.0	73		2.0			
JUN					12.5	2.4	80		20.0	17.5	12		1.0	.6	41	
JUL					15.0	3.0	80		25.0	16.0	36		1.6	1.0	31	
AUG					46.0	3.7	91		37.5	10.0	73		3.4	.7	77	
SEP					40.0	1.6	96		52.0	5.0	90		3.8	.9	75	
OCT					21.0	2.0	90		25.0	10.0	60		1.7	1.8	-	
NOV					55.0	2.0	96		200.0	5.0	97		4.4			
DEC					35.0	5.0	85		50.0	12.0	76		2.7	2.9	-	
TOTAL																
AVERAGE					35.2	6.7	80		55.9	12.5	77		3.0	2.2	27	
MAXIMUM																
NO. OF SAMPLES					19	18			17	18			17	15		

Waste Stabilization Pond

PROJECT : BRUCE MINES

Cell Acreage : 7.3
Cell area: 3.0 ha

Total Acreage : 7.3
Total hectares: 3.0

Commenced Operation : January 16, 1975

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

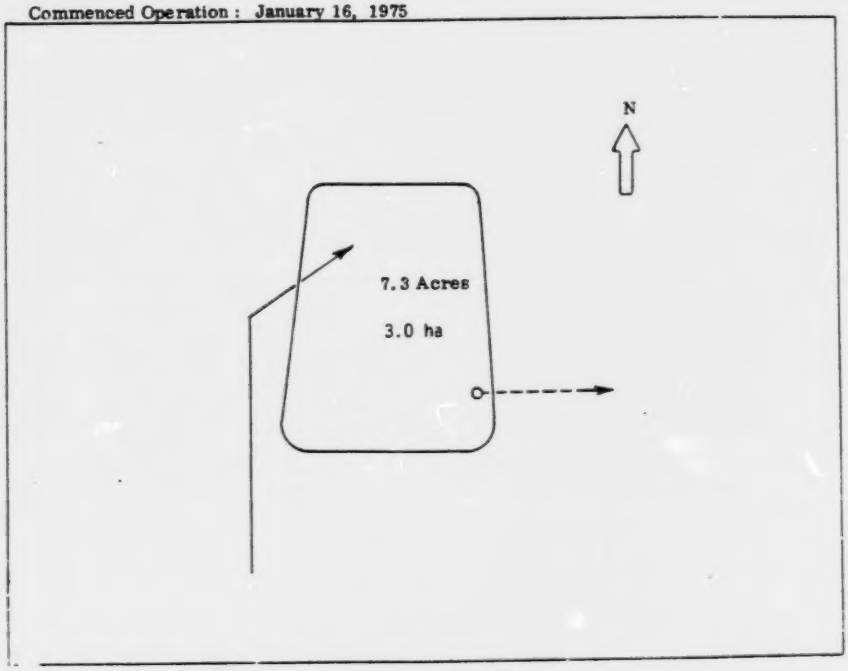
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 207 l gpm 15.7 l/s
Pump 2 : 207 l gpm 15.7 l/s

Total Cap : 207 l gpm
15.7 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001756 BRUCE MINES LAGOON

MUNICIPALITY : BRUCE MINES
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION	569
POPULATION SERVED	422
PERCENT SERVED	74.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.318 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	6.164	.184			155.0				93.0				6.5			
FEB	5.351	.191			225.0				405.0				10.0			
MAR	14.456	.482			650.0				1100.0				4.0			
APR	17.102	.552		39.000	13.0	6.5	50		160.0	17.2	89		1.0	2.5		
MAY	10.740	.346			90.0				75.0				6.9			
JUN	10.824	.373			58.0				80.0				6.0			
JUL	11.892	.372			72.5				60.0				4.7			
AUG	10.686	.345			110.0				105.0				4.7			
SEP	8.288	.296			50.5				72.5				3.6			
OCT	10.450	.317		43.400	59.0	13.1	77		67.5	30.0	55		3.7	.8	76	
NOV	11.422	.381			56.0				60.0				2.7			
DEC	10.432	.337			30.0				52.5				3.2			
TOTAL	127.807			82.400				15.∞				21.8				0.383
AVERAGE		.348			130.7	9.8	92		194.2	23.6	87		4.7	1.7	63	
MAXIMUM				43.400												
NO. OF SAMPLES					20	10			20	10			20	10		

Waste Stabilization Pond

PROJECT : BURKS FALLS

Cell Acreage : 9.5 + 9.5

Total Acreage : 19

Cell area: 3.8 + 3.8 ha

Total hectares: 7.7

Commenced Operation : 1974

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

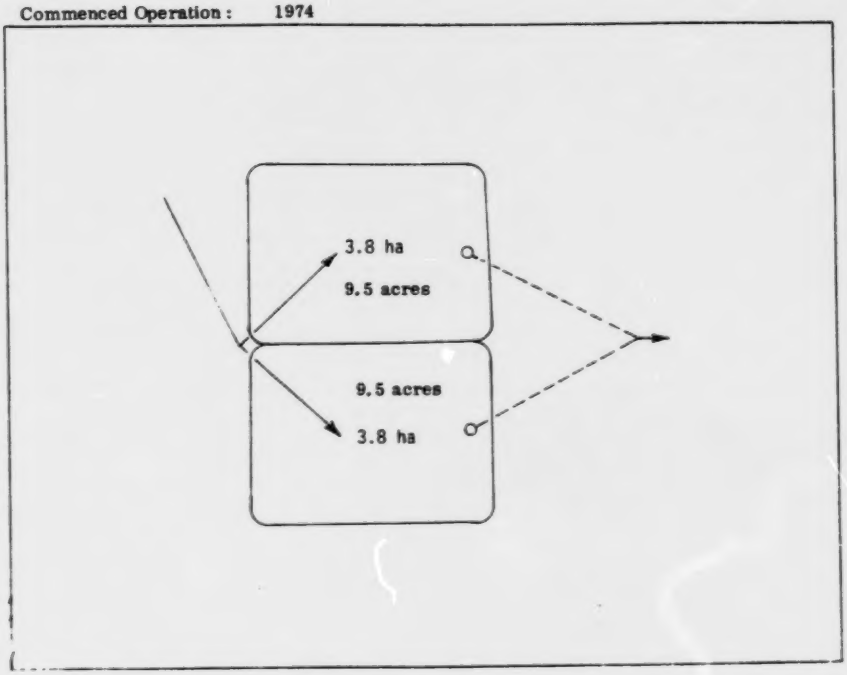
- □ Batch
- □ Continuous
- ■ None

Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 415 I gpm 31.4 l/s
Pump 2 : 415 I gpm 31.4 l/s
Total Cap : 415 I gpm 31.3 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001426 BURKS FALLS LAGOON

MUNICIPALITY : BURKS FALLS
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 841
POPULATION SERVED : 800
PERCENT SERVED : 95.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.863 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	Y.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	7.060	.227	.282													
FEB	5.892	.209	.218													
MAR	8.806	.282	.382													
APR	9.535	.317	.356		140.0				185.0				7.1			
MAY	9.524	.307	.316	49.477	135.0	9.8	92		155.0	26.0	83		5.0	2.4	51	
JUN	7.900	.266	.267		65.0				90.0							
JUL	7.586	.244	.245		105.0				95.0				7.3			
AUG	8.299	.267	.285													
SEP	8.500	.280	.280		140.0				145.0				8.0			
OCT	8.843	.285	.285		100.0	3.1	96		115.0	8.6	92		6.7	.8	88	
NOV	10.102	.336			73.0				93.0				6.1			
DEC	9.996	.322	.333		82.0				90.0				5.1			
TOTAL	102.043			49.477				10.0				10.3				0.489
AVERAGE		.279			105.0	6.4	93		118.5	17.3	85		6.4	1.6	74	
MAXIMUM			.382	49.477												
NO. OF SAMPLES					10	5			10	5			10	5		

Waste Stabilization Pond

PROJECT : CALDWELL TWP (Verner)

Cell Acreage : 7.0 + 7.0

Cell area: 2.8 + 2.8 ha

Total Acreage : 14

Total hectares: 5.6

Commenced Operation : 1975

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

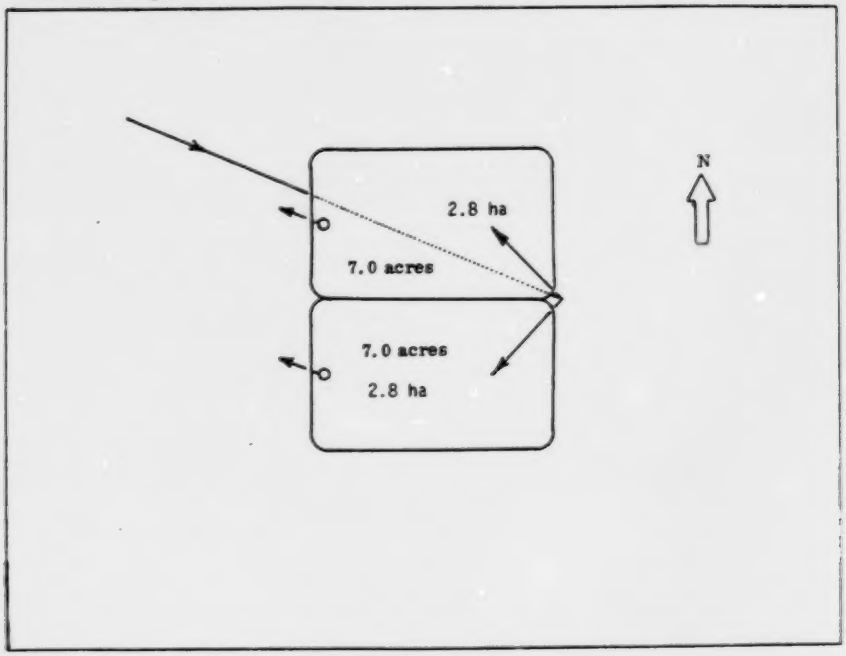
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 492 I gpm 37.2 l/s
Pump 2 : 492 I gpm 37.2 l/s

Total Cap : 492 I gpm 37.2l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001872 VERNER LAGOON

MUNICIPALITY : CALDWELL (VERNER)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 1,804
POPULATION SERVED : 1,100
PERCENT SERVED : 60 9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.838 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	13.020	.418	.623													
FEB	9.665	.345	.400													
MAR	28.003	.923	2.959													
APR	36.000	1.230	2.280													
MAY	23.480	.756	1.190	84.000	*	*			*	*			*	.4		
JUN	18.130	.604	.955													
JUL	15.130	.488	.686													
AUG	18.550	.600	.870													
SEP	16.950	.570	.750										1.0			
OCT	15.810	.510	.750	44.000	*	11.3			*	75.0			*	.6		
NOV	16.670	.540	2.070	44.000	56.0	4.6	91		70.0	5.8	91		4.5	.6	86	
DEC	17.210	.560	1,300													
TOTAL	228.618			172.000				10.9				6.7				0.302
AVERAGE		.629			56.0	8.0	85		70.0	40.4	42		2.7	.5	78	
MAXIMUM			2.959	84.000												
NO. OF SAMPLES					1	16			1	16			3	22		

Waste Stabilization Pond

PROJECT : ENGLEHART

Cell Acreage : 10 + 10

Cell area: 4.0 + 4.0 ha

Total Acreage : 20

Total hectares: 8.0

Commenced Operation : -

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- ■ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

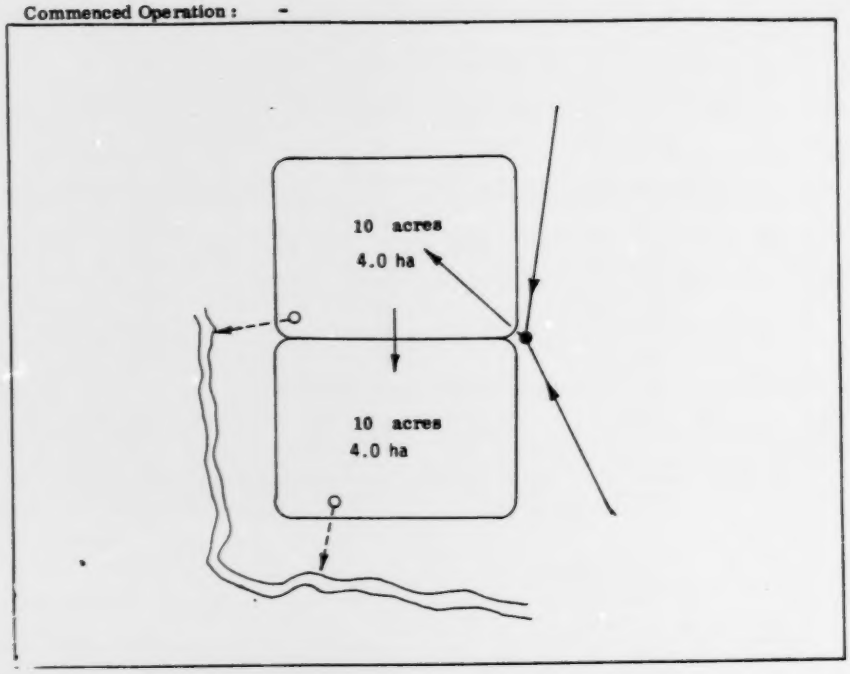
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 350 lgpm 26.5 l/s
Pump 2 : 350 lgpm 26.5 l/s

Total Cap : 350 lgpm 26.5 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000187 ENGLEHART LAGOON

MUNICIPALITY : ENGLEHART (C-D)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON (CONTINUOUS DISCHARGE)

CURRENT POPULATION : 1,689
POPULATION SERVED : 1,706
PERCENT SERVED : 101.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.908 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
					INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/78-DEC/78																
JAN	28.962	.936		28.962	85.0	22.0	74	1.8	115.0	22.0	80	2.6	5.4	4.0	25	.041
FEB	27.412	1.023		27.412	110.0	36.5	66	2.0	140.0	13.0	90	3.4	6.1	4.1	32	.058
MAR	49.811	1.605		49.811	50.0	27.0	46	1.1	102.5	17.0	83	4.2	3.1	3.7	-	-
APR	84.200	2.800		84.200	22.0	18.0	18	.3	72.5	15.0	79	4.8	1.3	3.0	-	-
MAY	66.000	2.130		66.000	13.0	8.5	34	.2	45.0	15.0	66	1.9	1.6			
JUN	60.100	2.000		60.100	40.0	3.5	91	2.1	70.0	7.0	90	3.7	2.9	1.5	48	.084
JUL	42.000	1.300		42.000	32.0	6.0	81	1.0	55.0	10.0	81	1.8	3.9	1.6	58	.097
AUG	39.660	1.270		39.660	24.0	5.0	79	.7	45.0	22.5	50	.8	2.4	1.3	43	.042
SEP	35.500	1.180		35.500	61.5	7.5	87	1.9	62.5	4.2	93	2.0	3.8	1.3	66	.091
OCT	54.000	1.740		54.000	49.5	5.5	88	2.3	72.5	30.0	58	2.2	3.4	.9	73	.136
NOV	54.000	1.800		54.000	37.0	5.5	85	1.7	85.0	15.0	82	3.7	2.8	1.2	57	.088
DEC	39.000	1.250		39.000	35.0	2.6	92	1.2	240.0	11.5	95	8.9	3.5	1.7	51	.070
TOTAL	580.645			580.645				18.9				40.8				.702
AVERAGE		1.588			46.5	12.3	73		92.0	15.1	83		3.3	2.2	34	
MAXIMUM				84.200												
NO. OF SAMPLES					24	19			24	21			24	19		

Waste Stabilization Pond

PROJECT : FAUQUIER TWP. (MOONBEAM)

412

Cell Acreage : 6.0 Cell area: 2.4 ha

Total Acreage : 6.0 Total hectares: 2.4

Commenced Operation : 1961

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

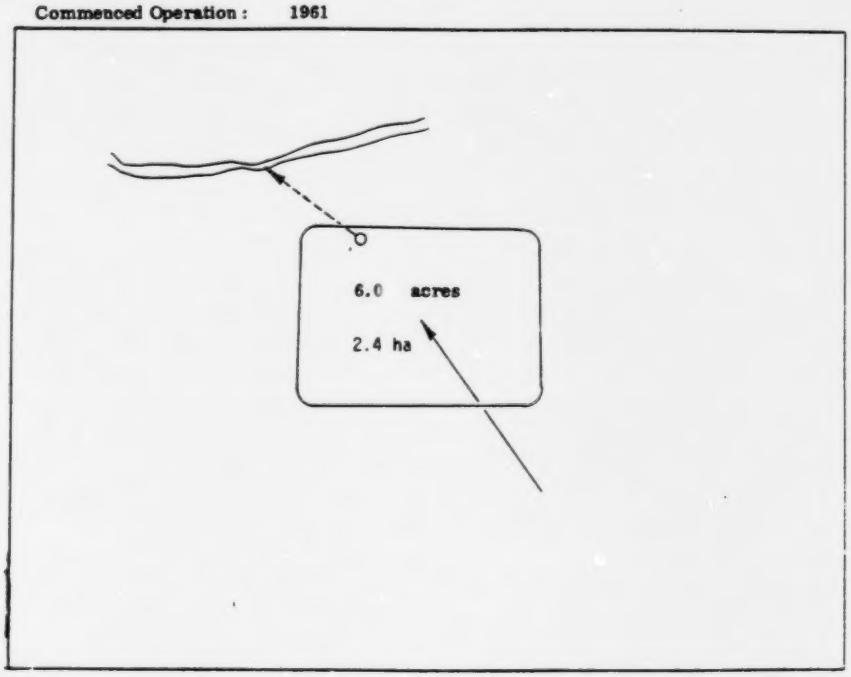
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 338 I gpm 25.6 l/s
Pump 2 : 338 I gpm 25.6 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000230 MOONBEAM LAGOON

MUNICIPALITY : FAUQUIER (MOONBEAM)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 1,403
POPULATION SERVED : 1,000
PERCENT SERVED : 71.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.272 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	6.637	.214	.368		170.0				145.0							
FEB	8.296	.295	.368		200.0				265.0				14.0			
MAR	9.219	.295	.641		160.0				155.0				13.5			
APR	32.999	1.100	2.764		17.0				55.0				3.0			
MAY	20.372	.657	1.659	72.300	65.0	8.5	86		100.0	133.2	-		3.3	1.7	48	
JUN	59.912	1.997	3.882		57.0				126.7				8.4			
JUL	10.476	.339	.388		90.0				145.0				9.7			
AUG	8.487	.274	.550		200.0				270.0				17.0			
SEP	8.954	.299	.550	44.400	*	5.9			*	74.2			*	1.1		
OCT	9.495	.306	.555		*				*				*			
NOV	5.520	.184	.276		407.5				702.5				3.0			
DEC	*	*			*				*				*			
TOTAL	180.367			116.700			26.0				20.6					1.358
AVERAGE		.542			151.8	7.2	95		218.2	103.7	52		8.9	1.4	84	
MAXIMUM			3.882	72.300												
NO. OF SAMPLES					14	12			14	12			13	12		

Waste Stabilization Pond

PROJECT : HAILEYBURY (NORTH COBALT)

Cell Acreage : 10 Cell area: 4 ha

Total Acreage : 10 Total hectares: 4

Commenced Operation: N/A

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

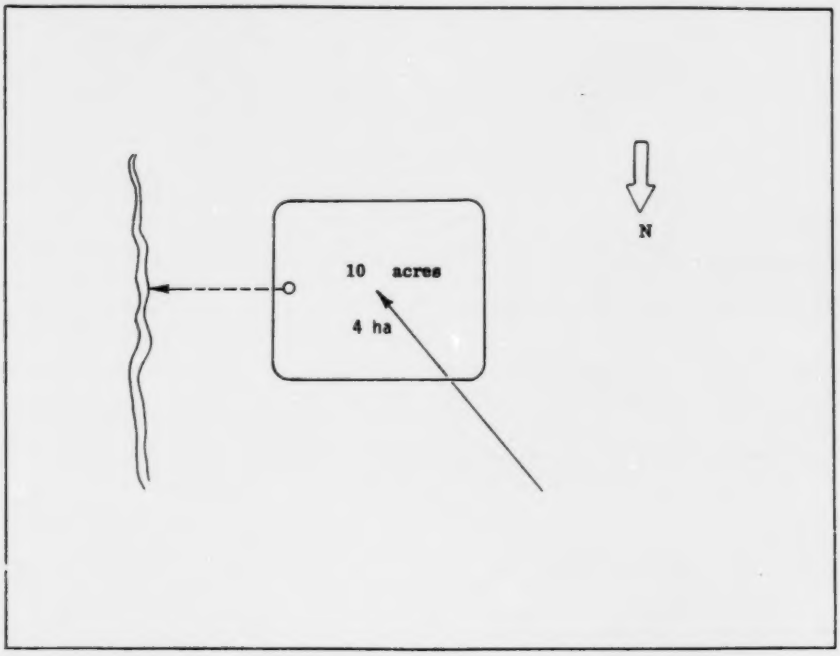
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 231 I gpm 17.5 l/s
Pump 2 : 225 I gpm 17.5 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001382 NORTH COBALT LAGOON

MUNICIPALITY : HAILEYBURY N COBALT
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 4,997
POPULATION SERVED : 800
PERCENT SERVED : 16.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.434 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->										
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	6.505	.210	.263		140.0				205.0							
FEB	5.896	.211	.258		260.0				340.0				4.0			
MAR	21.652	.696	1.596	21.650	50.0				105.0				5.9			
APR	30.800	1.250	1.500	30.800	52.0				70.0				3.1			
MAY	16.980	.550	1.000	47.900	59.0	15.0	74		83.0	15.0	81		4.1	3.2	21	
JUN	10.500	.350	1.300		67.0				137.0				4.8			
JUL	13.333	.365	1.300		88.0				140.0				3.9			
AUG	7.400	.240	.420		64.0				90.0				5.4			
SEP	6.900	.230	.410	5.200	155.0				190.0				9.4			
OCT	16.000	.520	.830	54.300	63.0	28.0	55		90.0	6.7	92		5.4	2.1	61	
NOV	14.700	.490	1.300		121.0				1572.5				9.0			
DEC	8.270	.270	.460		110.0				122.5				8.0			
TOTAL	158.936			159.850				12.8				39.9				0.492
AVERAGE		.449			102.4	21.5	79		282.0	10.8	95		5.7	2.6	53	
MAXIMUM			1.596	54.300												
NO. OF SAMPLES					19	6			19	6			18	6		

Waste Stabilization Pond

PROJECT : HEARST

Cell Acreage : 15.5 + 15.5 + 15.5 + 15.5 Cell Area: 6.3 + 6.3 + 6.3 + 6.3 ha
(Note: Est. 50 Acres Usable due to rock outcropping)
Total Acreage : 50 (Usable Equivalent) Total hectares: 20.2 (Usable)

Commenced Operation : July 1973

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- ■ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

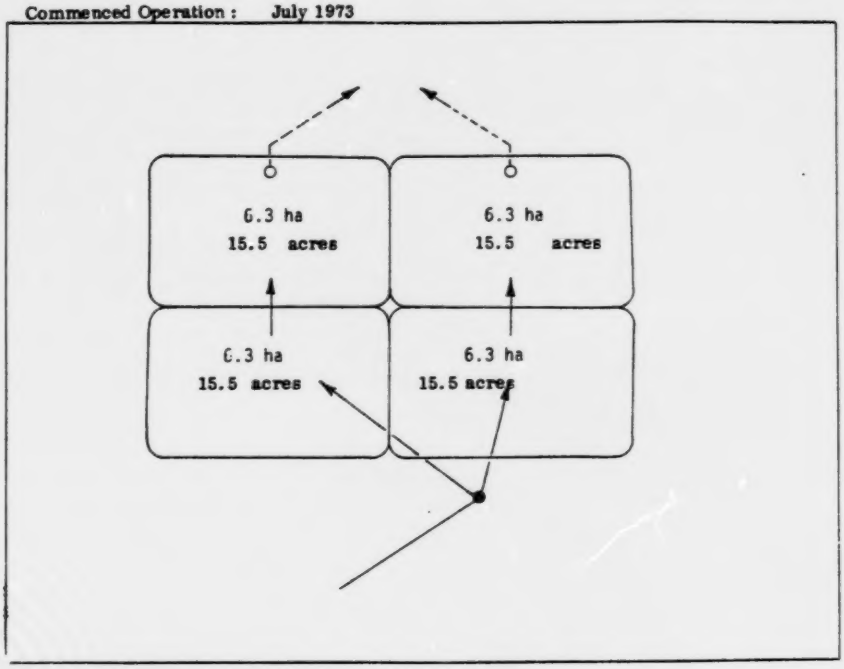
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 1400 I gpm 106.0 l/s
Pump 2 : 1400 I gpm 106.0 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000338 HEARST LAGOON
MUNICIPALITY : HEARST
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON
CONTINUOUS DISCHARGE
CURRENT POPULATION 5,212
POPULATION SERVED 5,200
PERCENT SERVED 99.7

* DATA NOT AVAILABLE

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.273 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	85.824	2.768	4.241		40.0				29.0							
FEB	81.337	2.905	3.639	81.337	160.0	28.0	82		95.0	13.0	86		6.4	4.0	37	
MAR	123.310	3.969	9.501	123.310	*	50.0			*	13.0			*	4.3		
APR	190.477	6.349	12.620	190.477	*	253.0			*	168.0			*	2.3		
MAY	147.745	4.764	11.706	290.944	81.0	21.0	74		198.0	24.0	87		3.7	2.1	43	
JUN	105.681	3.522														
JUL	104.915	3.384														
AUG	*	*														
SEP	110.672	3.952	7.424		7.6	5.0	34		43.2	11.6	73		3.4	3.1	8	
OCT	126.633	4.084	8.138													
NOV	100.909	3.363	6.715													
DEC	87.541	2.823	4.644													
TOTAL	1265.044			686.068				0.8				57.4				1.771
AVERAGE		3.808			72.1	71.4	1		91.3	45.9	49		4.5	3.1	29	
MAXIMUM			12.620	290.944												
NO. OF SAMPLES					8	38			8	38			10	38		

Waste Stabilization Pond

PROJECT : LITTLE CURRENT

Cell Acreage : 10 Cell area: 4.0 ha

Total Acreage : 10 Total hectares: 4.0

Commenced Operation: Jan, 1965

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

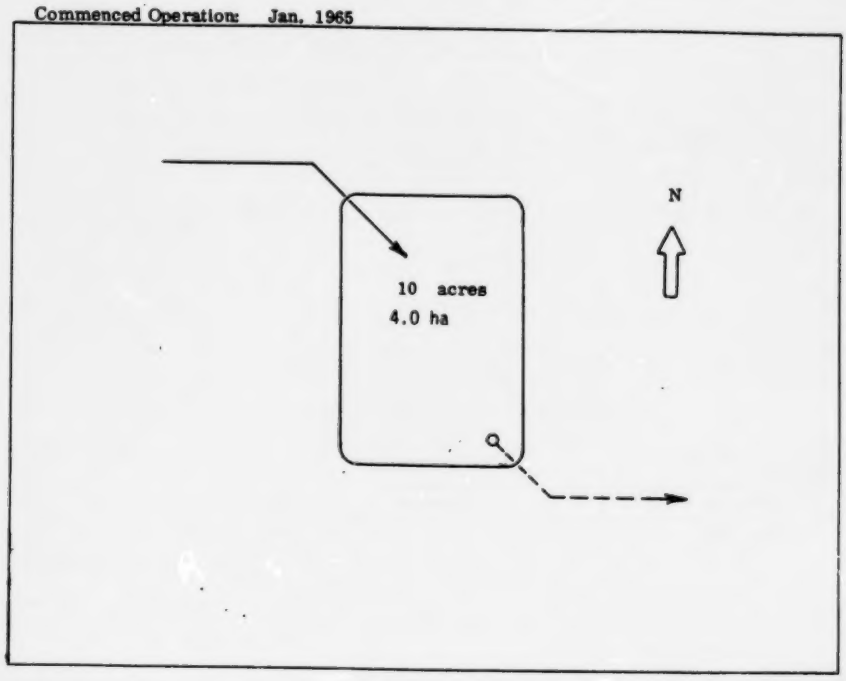
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 434 I gpm 32.9 l/s
Pump 2 : 434 I gpm 32.9 l/s

Total Cap : 434 I gpm 32.9 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000392 LITTLE CURRENT LAGOON — MUNICIPALITY : LITTLE CURRENT (C-D) — REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON (CONTINUOUS DISCHARGE) — CURRENT POPULATION : 1,517 — POPULATION SERVED : 500 — PERCENT SERVED : 32.9

* DATA NOT AVAILABLE

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	17.110	.550	.900	17.110	*	*			*	*			*	*		
FEB	14.170	.510	.570	14.170	*	*			*	*			*	*		
MAR	28.540	.920	1.370	28.540	65.0	17.0	73	1.3	35.0	12.0	65	.6	5.9	4.2	28	.049
APR	26.610	.890	1.320	26.610	38.0	17.0	55	.5	70.0	15.0	78	1.4	5.7	3.6	36	.056
MAY	18.670	.600	1.450	37.200	75.0	14.0	81	1.1	58.0	40.0	31	.3	6.2	2.5	59	.089
JUN	11.870	.400	.630	19.560	148.0	16.0	89	1.5	190.0	27.0	85	1.9	8.6	2.9	66	.068
JUL	15.200	.490	.590		195.0	*			167.0	*			8.2	*		
AUG	16.500	.530		5.600	*	*			*	*			*	*		
SEP	13.500	.450		12.640	67.0	9.0	86	.7	73.0	14.0	80	.7	4.4	3.6	18	.011
OCT	12.640	.410	.520	13.550	98.0	4.0	95	1.1	110.0	5.0	95	1.3	10.0	4.4	56	.071
NOV	13.550	.450	.690	36.300	*	*			*	*			*	*		
DEC	14.470	.470	.740		43.0	*			75.0	*			4.2	*		
TOTAL	202.830			211.280				6.6				6.5				.324
AVERAGE		.556			91.1	12.8	85		97.2	18.8	80		6.6	3.5	46	
MAXIMUM			1.450	37.200												
NO. OF SAMPLES					12	7			12	7			12	7		

Waste Stabilization Pond

PROJECT : MATTAWA

Cell Acreage : 4.5 + 8.5 + 5.0

Cell Area: 1.8 + 3.4 + 2.0 ha

Total Acreage : 18.0

Total hectares: 29.1

Commenced Operation : 1963

Operation :

- ■ Series (# 1 & # 3 in parallel
- □ Parallel Series to #2)
- □ Other :

Discharge :

- □ Seasonal
- ■ Continuous (100% Exfiltration)
- □ Annual
- ■ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

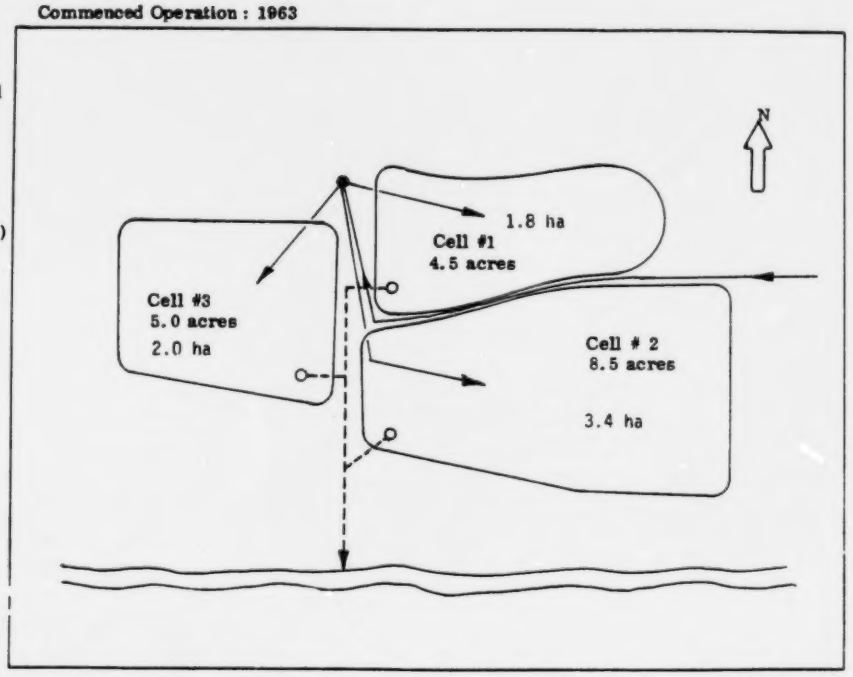
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 800 I gpm 60.6 l/s
Pump 2 : 800 I gpm 60.6 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000436 MATTAWA LAGOON — MUNICIPALITY : MATTAWA (EXFILT)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXFILTRATION LAGOON.. CONTINOUS DISCHARGE

* DATA NOT AVAILABLE

CURRENT POPULATION : 2,697
POPULATION SERVED : 2,600
PERCENT SERVED : 96.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.818 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
				INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/78-DEC/78																
JAN	17.020	.550	2.290		80.0	65.0	18	.2	42.0	30.0	28	.2	2.6	*		
FEB	16.038	.573	.655		94.0	30.0	68	1.0	105.0	14.0	86	1.4	6.0	4.8	20	.019
MAR	22.930	.741	.981		46.0	24.0	47	.5	55.0	15.0	72	.9	4.3	3.0	30	.030
APR	34.850	1.160	2.620		41.0	13.0	68	.9	68.0	17.0	75	1.7	3.0	1.7	43	.045
MAY	44.840	1.450	2.460		60.0	12.0	80	2.1	60.0	30.0	66	1.7	5.6	1.0	82	.206
JUN	17.840	.600	.980		50.0	*			70.0	35.0	50	.6	2.3	*		
JUL	17.500	.560			47.0	36.0	23	.1	38.0	14.0	63	.4	3.6	3.6		
AUG	17.674	.570	.654		63.0	12.0	80	.9	48.0	24.0	50	.4	6.0	2.2	63	.067
SEP	15.056	.502	.654		113.0	23.0	79	1.3	117.0	38.0	67	1.1	7.7	4.3	44	.051
OCT	27.166	.876	1.145		59.0	5.0	91	1.4	50.0	13.0	74	1.0	3.3	3.3		
NOV	23.893	.796	1.309		40.0	8.0	80	.7	40.0	*			2.1	*		
DEC	24.540	.790	1.310		31.0	22.0	29	.2	48.0	13.0	72	.8	2.4	*		
TOTAL	279.347							9.8				10.6				.418
AVERAGE		.764			60.3	22.7	62		61.7	21.1	65		4.0	2.9	26	
MAXIMUM			2.620													
NO. OF SAMPLES					19	20			19	18			19	12		

Waste Stabilization Pond

PROJECT : MICHIPICOTEN TWP (WAWA)

Cell Acreage : 20 + 20 Cell area: 8.1 + 8.1

Total Acreage : 40 Total hectares: 16.2

Commenced Operation : September 1963

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

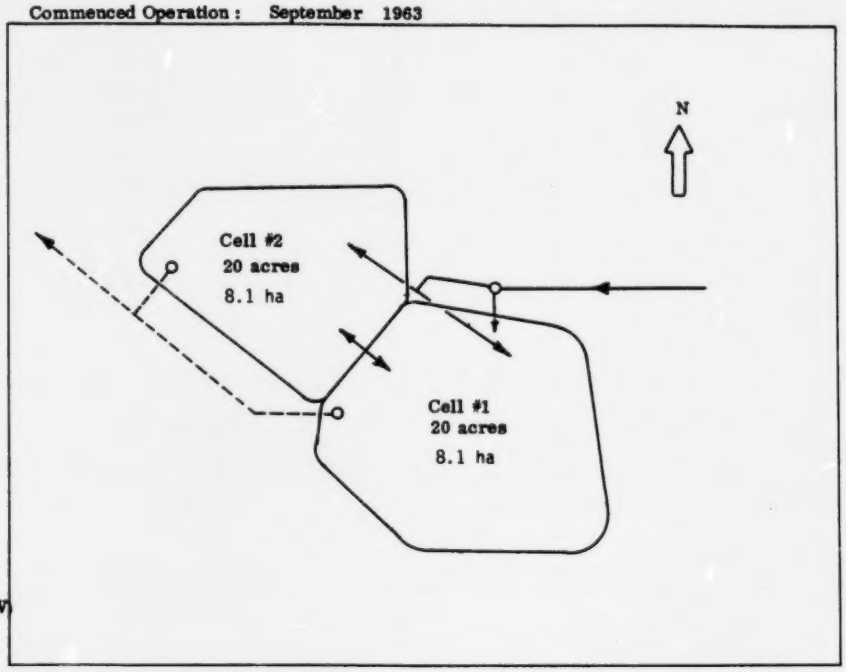
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 :
Pump 2 : (GRAVITY FLOW)

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000454 WAWA LAGOON

MUNICIPALITY : MICHIPICOTEN (WAWA)(C-D)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON (CONTINUOUS DISCHARGE)

CURRENT POPULATION : 4,595
POPULATION SERVED : 4,000
PERCENT SERVED : 87.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.818 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	100.489	3.241	4.305		30.0	15.0	50	1.5	25.0	10.0	60	1.5	(DATA NOT AVAILABLE)			
FEB	86.374	3.087														
MAR	98.466	3.177	3.914		40.0	30.0	50	1.9	40.0	10.0	75	2.9				
APR	(DATA NOT AVAILABLE)				(DATA NOT AVAILABLE)				(DATA NOT AVAILABLE)							
MAY																
JUN																
JUL																
AUG																
SEP																
OCT																
NOV																
DEC																
TOTAL	285.329							3.4				4.4				
AVERAGE		3.168			35.0	17.5	50		32.5	10.0	69					
MAXIMUM			4.305													
NO. OF SAMPLES					2	2			2	2						

Waste Stabilization Pond

PROJECT : NEW LISKEARD

Cell Acreage : 10.1 + 10.0 (6 New Liskeard + 1 Dymond Twp) + 10.1 + 12.8 + 20.7

Total Acreage : 63.7 (New Liskeard)

Cell area: 4.1 + 4.0 (2.4 New Liskeard + 1.6 Dymond Twp.) + 4.1 + 5.2 + 8.4 ha

Total hectares: 25.8

Commenced Operation : 1964
Expansion to 63.7 Acres : August 1973

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- □ Continuous
- □ Annual
- ■ Other : Continuous with Spring drawdown

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

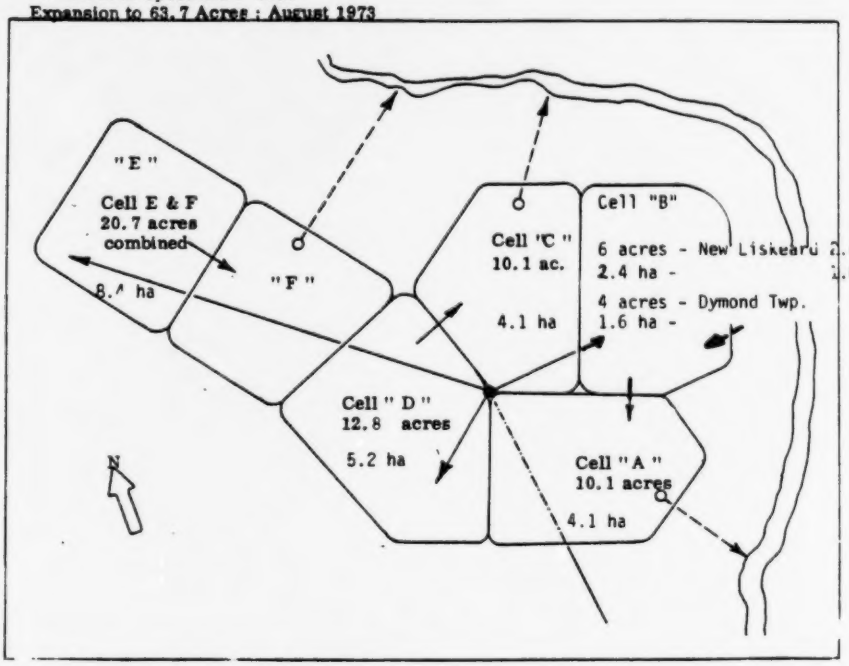
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 1280 I gpm 96.9 l/s
Pump 2 : 1160 I gpm 87.8 l/s

Total Cap : 1630 I gpm 123.4 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000515 NEW LISKEARD LAGOON

MUNICIPALITY : NEW LISKEARD (C-D)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON

CURRENT POPULATION : 5,496
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.886 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	90.000	2.900	4.200													
FEB	85.000	3.000	4.200													
MAR	168.000	5.400	10.300													
APR	276.254	9.208	10.696		45.1				99.4				2.1			
MAY	209.683	6.764	11.550		91.9				128.8				5.5			
JUN	164.360	5.479	8.378		118.7				130.4				4.3			
JUL	184.983	5.128	10.670		84.7				109.5				4.6			
AUG	124.917	4.029	5.236		95.3				145.8				7.6			
SEP	114.440	3.815	5.701		88.0				136.0				5.8			
OCT	183.380	5.270	9.659		57.0				77.0				3.2			
NOV	161.668	5.389	10.441		79.0				134.0				5.6			
DEC	124.626	4.020	5.586		119.0				135.0				7.4			
TOTAL	1847.311															
AVERAGE		5.034			86.5				121.7				5.1			
MAXIMUM			11.550													
NO. OF SAMPLES					18				18				17			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110004021 NEW LISKEARD LAGOON CELLS A-B

MUNICIPALITY : NEW LISKEARD (CELL A-B)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL SERIES OPERATION

CURRENT POPULATION : 5,481
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.864 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL TO W/COURSE 1000 M3	BOD INFLUENT MG/L	BOD EFFLUENT MG/L	BOD REDUCTION %	BOD REDUCTION 1000 KG	SUSP.SOLIDS INFLUENT MG/L	SUSP.SOLIDS EFFLUENT MG/L	SUSP.SOLIDS REDUCTION %	SUSP.SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS REDUCTION %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/79-DEC/79																
JAN																
FEB																
MAR																
APR					2.0				8.0				3			
MAY					18.0				35.0				2.9			
JUN					16.5				32.5				1.1			
JUL					9.0				9.0				3.0			
AUG					9.3				30.5				2.7			
SEP					3.3				10.5				4.0			
OCT					9.0				10.0				4.0			
NOV					9.8				8.0				3.7			
DEC					16.0				29.0				4.3			
TOTAL																
AVERAGE					9.4				17.6				3.7			
MAXIMUM																
NO. OF SAMPLES					17				17				18			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110003300 NEW LISKEARD LAGOON CELL C-D

MUNICIPALITY : NEW LISKEARD
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON CONTINOUS SERIES OPERATION

CURRENT POPULATION : 5,481
POPULATION SERVED : 5,400
PERCENT SERVED : 98.5

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.864 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL TO W/COURSE 1000 M3	BOD INFLUENT MG/L	BOD EFFLUENT MG/L	BOD REDUCTION %	BOD REDUCTION 1000 KG	SUSP.SOLIDS INFLUENT MG/L	SUSP.SOLIDS EFFLUENT MG/L	SUSP.SOLIDS REDUCTION %	SUSP.SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS REDUCTION %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/79-DEC/79																
JAN																
FEB																
MAR																
APR					22.0				11.0				4.0			
MAY					13.5				15.0				3.9			
JUN					13.5				14.0				1.5			
JUL					10.0				13.0				3.3			
AUG					12.0				16.0				4.0			
SEP					10.0				17.0				4.3			
OCT					8.0				17.0				8.3			
NOV					4.0				9.0				3.8			
DEC					13.0				8.0				4.4			
TOTAL																
AVERAGE					11.5				12.6				3.8			
MAXIMUM																
NO. OF SAMPLES					9				9				9			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110003095 NEW LISKEARD LAGOON CELLS E-F

MUNICIPALITY : NEW LISKEARD (CELL E-F)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL SERIES OPERATION

CURRENT POPULATION : 5,481
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY : MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.864 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL TO W/COURSE 1000 M3	BOD INFLUENT MG/L	BOD EFFLUENT MG/L	BOD REDUCTION %	BOD REDUCTION 1000 KG	SUSP.SOLIDS INFLUENT MG/L	SUSP.SOLIDS EFFLUENT MG/L	SUSP.SOLIDS REDUCTION %	SUSP.SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS REDUCTION %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/79-DEC/79																
JAN																
FEB																
MAR																
APR					12.0				9.0				1.8			
MAY					14.0				19.5				3.0			
JUN					5.3				7.5				2.9			
JUL					7.5				19.0				3.7			
AUG					7.0				9.5							
SEP					8.0				8.0				3.7			
OCT					9.0				18.0				3.6			
NOV					8.0				11.0				3.3			
DEC					17.0				30.0				3.7			
TOTAL																
AVERAGE					9.4				13.3				3.1			
MAXIMUM																
NO. OF SAMPLES					10				10				10			

Waste Stabilization Pond

PROJECT : NEW LISKEARD

Cell Acreage : 10.1 + 10.0 (6 New Liskeard + 1 Dymond Twp) + 10.1 + 12.8 + 20.7

Cell area: 4.1 + 4.0 (2.4 New Liskeard + 1.6 Dymond Twp.) + 4.1 + 5.2 + 8.4 ha

Total Acreage : 63.7 (New Liskeard)

Total hectares: 25.8

Commenced Operation : 1964
Expansion to 63.7 Acres : August 1973

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- □ Continuous
- □ Annual
- ■ Other : Continuous with Spring drawdown

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

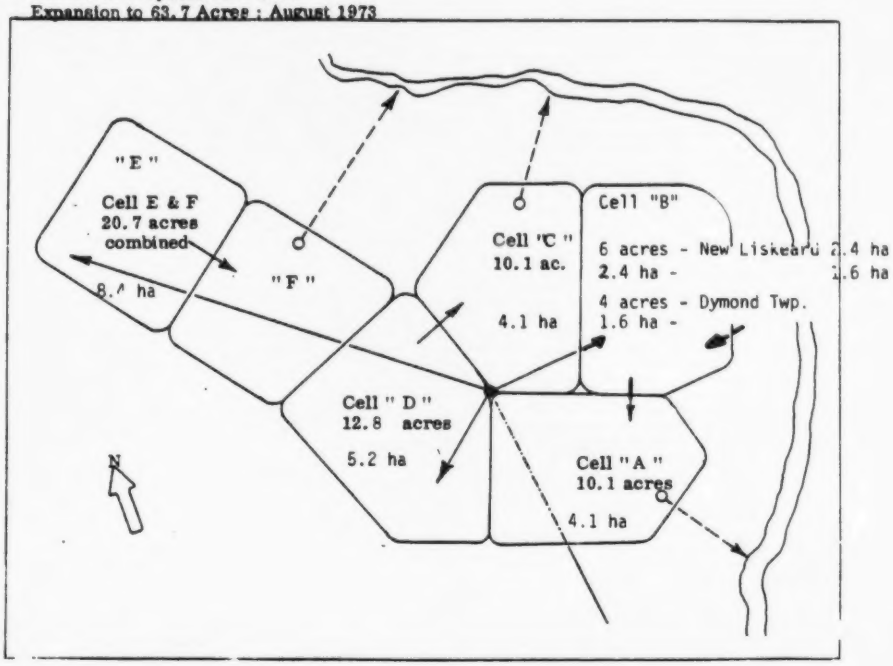
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 1280 I gpm 96.9 l/s
Pump 2 : 1160 I gpm 87.8 l/s

Total Cap : 1630 I gpm 123.4 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000515 NEW LISKEARD LAGOON

MUNICIPALITY : NEW LISKEARD (C-D)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON

CURRENT POPULATION : 5,496
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.885 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	90.000	2.900	4.200													
FEB	85.050	3.000	4.200													
MAR	188.000	5.400	10.300													
APR	276.254	9.208	10.696		45.1				99.4				2.1			
MAY	209.683	6.764	11.550		91.9				128.8				5.5			
JUN	164.360	5.479	8.378		118.7				130.4				4.3			
JUL	164.983	5.128	10.670		84.7				109.5				4.6			
AUG	124.917	4.029	5.236		95.3				145.8				7.6			
SEP	114.440	3.815	5.701		88.0				136.0				5.8			
OCT	163.380	5.270	9.659		57.0				77.0				3.2			
NOV	161.668	5.389	10.441		79.0				134.0				5.6			
DEC	124.626	4.020	5.586		119.0				135.0				7.4			
TOTAL	1847.311															
AVERAGE		5.034			86.5				121.7				5.1			
MAXIMUM			11.550													
NO. OF SAMPLES					18				18				17			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110004003 NEW LISKEARD LAGOON CELLS A-B

MUNICIPALITY NEW LISKEARD (CELL A-B)
REGION 05 NORTHEASTERN

TREATMENT FACILITY CONVENTIONAL LAGOON SEASONAL SERIES OPERATION

CURRENT POPULATION 5,481
POPULATION SERVED 0
PERCENT SERVED 0.0

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.984 1000 M3 DESIGN BODB : 0.0 MG/L DESIGN SUSP SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN																
FEB																
MAR																
APR					2.0				8.0				3			
MAY					18.0				35.0				3.9			
JUN					18.5				33.5				1.1			
JUL					9.0				9.0				3.0			
AUG					5.3				30.5				3.7			
SEP					3.3				10.5				4.0			
OCT					9.0				10.0				4.0			
NOV					5.8				8.0				2.7			
DEC					18.0				35.0				4.3			
TOTAL																
AVERAGE					9.4				17.8				2.7			
MAXIMUM																
NO. OF SAMPLES					17				17				18			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110003200 NEW LISKEARD LAGOON CELL C-D

MUNICIPALITY NEW LISKEARD
REGION 05 NORTHEASTERN

TREATMENT FACILITY CONVENTIONAL LAGOON CONTINOUS SERIES OPERATION

CURRENT POPULATION 5,481
POPULATION SERVED 5,400
PERCENT SERVED 98.8

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.984 1000 M3 DESIGN BODB : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN																
FEB																
MAR																
APR					22.0				11.0				3.3			
MAY					13.5				15.0				3.9			
JUN					13.5				14.0				1.5			
JUL					10.0				13.0				3.3			
AUG					13.0				16.0				4.0			
SEP					10.0				17.0				4.3			
OCT					8.0				17.0				5.3			
NOV					4.0				9.0				3.8			
DEC					12.0				8.0				4.4			
TOTAL																
AVERAGE					11.5				13.8				3.8			
MAXIMUM																
NO. OF SAMPLES					9				9				9			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER 110003095 NEW LISKEARD LAGOON CELLS E-F

MUNICIPALITY NEW LISKEARD (CELL E-F)
REGION 05 NORTHEASTERN

TREATMENT FACILITY CONVENTIONAL LAGOON SEASONAL SERIES OPERATION

CURRENT POPULATION 5,481
POPULATION SERVED 0
PERCENT SERVED 0.0

OPERATING AUTHORITY MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.984 1000 M3 DESIGN BODB : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T VOL TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN																
FEB																
MAR																
APR					12.0				8.0				1.8			
MAY					14.0				18.5				3.0			
JUN					9.2				7.5				2.9			
JUL					7.5				15.0				2.7			
AUG					7.0				6.5							
SEP					6.0				9.0				3.7			
OCT					9.0				18.0				3.6			
NOV					8.0				11.0				3.3			
DEC					17.0				30.0				3.7			
TOTAL																
AVERAGE					9.4				13.3				3.1			
MAXIMUM																
NO. OF SAMPLES					18				18				15			

Waste Stabilization Pond

PROJECT : NORTH HIMSWORTH (CALLANDER)

Cell Acreage : 14.5

Total Acreage : 14.5

Cell area: 6.3 ha

Total hectares: 6.3

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other : One Cell

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

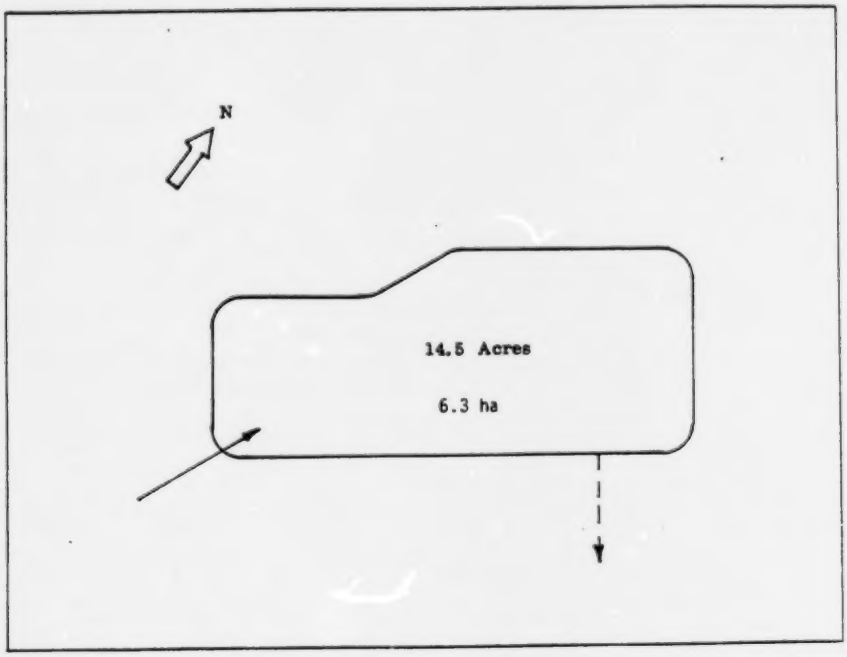
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 609 Igpm 46.1 l/s
Pump 2 : 609 Igpm 46.1 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001747 CALLANDER LAGOO' — MUNICIPALITY : NORTHHIMSWORTH(CALLANDER
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,314
POPULATION SERVED : 1,230
PERCENT SERVED : 53.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.477 1000 M3 — DESIGN BODS : 0.0 MG/L — DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
							REDUCTION					REDUCTION				REDUCTION
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	1000 KG
JAN/78-DEC/78																
JAN	9.670	.309	.382		125.0				125.0				6.9			
FEB	9.101	.327	.354		300.0				525.0				9.7			
MAR	20.240	.655	1.184		70.0				110.0				4.5			
APR	22.279	.742	1.150	22.279	65.5	6.5	90		73.5	12.0	83		3.8	.4	87	
MAY	19.700	.636	.774	49.955	78.0	3.0	96		57.5	9.2	83		4.2	.5	88	
JUN	14.547	.485	.645	41.629	125.0	7.4	94		130.0	9.9	92		8.2	.5	93	
JUL	11.977	.386	.480		180.0				150.0				7.7			
AUG	11.850	.382	.523		150.0				220.0				11.0			
SEP	12.061	.402	.482		135.0				130.0				7.6			
OCT	14.155	.457	1.456	41.629	177.5	2.5	98		100.0	6.0	94		8.4	.2	96	
NOV	16.630	.554	.644	31.889	83.0	1.1	98		87.5	.5	99		5.6	.1	97	
DEC	16.950	.547	.648		136.5				127.5				5.8			
TOTAL	179.180			187.181				23.2				26.0				1,182
AVERAGE		.490			133.7	4.1	96		153.0	7.4	95		6.9	.3	94	
MAXIMUM			1.456	49.955												
NO. OF SAMPLES					20	25			20	25			20	25		

Waste Stabilization Pond

PROJECT : OWENS W.I. (VAL RITA)

Cell Acreage : 9.0 + 7.5

Cell Area : 2.7 + 2.3 ha

Total Acreage : 16.5

Total Hectares : 5.0

Commenced Operation: September 1979

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- □ Continuous
- ■ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

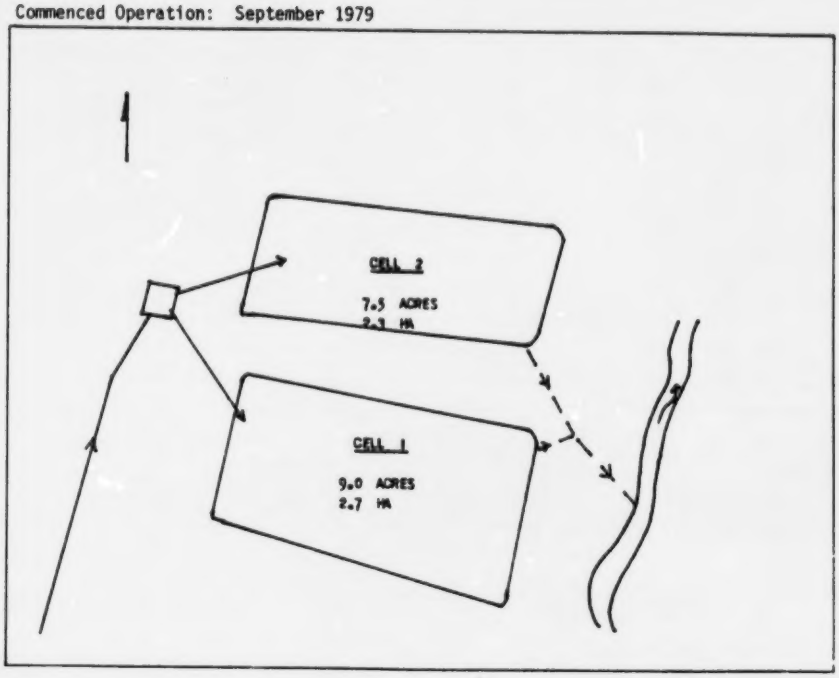
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1: 85 I gpm 6.4 l/s
Pump 2: 85 I gpm 6.4 l/s

Total Cap: 170 I gpm 12.8 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002318 VAL-RITA LAGOON (NO DISCHARGE IN 79)

MUNICIPALITY : OWENS,WILLIAMSON-IDING'T
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,410
POPULATION SERVED : 500
PERCENT SERVED : 35.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.704 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	5.097	.164														
FEB	5.097	.182														
MAR	5.097	.164														
APR	5.097	.170														
MAY	5.097	.164														
JUN																
JUL																
AUG																
SEP																
OCT																
NOV																
DEC																
TOTAL	25.485															
AVERAGE		.169														
MAXIMUM																
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : POWASSAN

Cell Acreage : 7

Total Acreage : 7

Cell area: 12.8 ha

Total hectares: 2.8

Commenced Operation : 1962

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

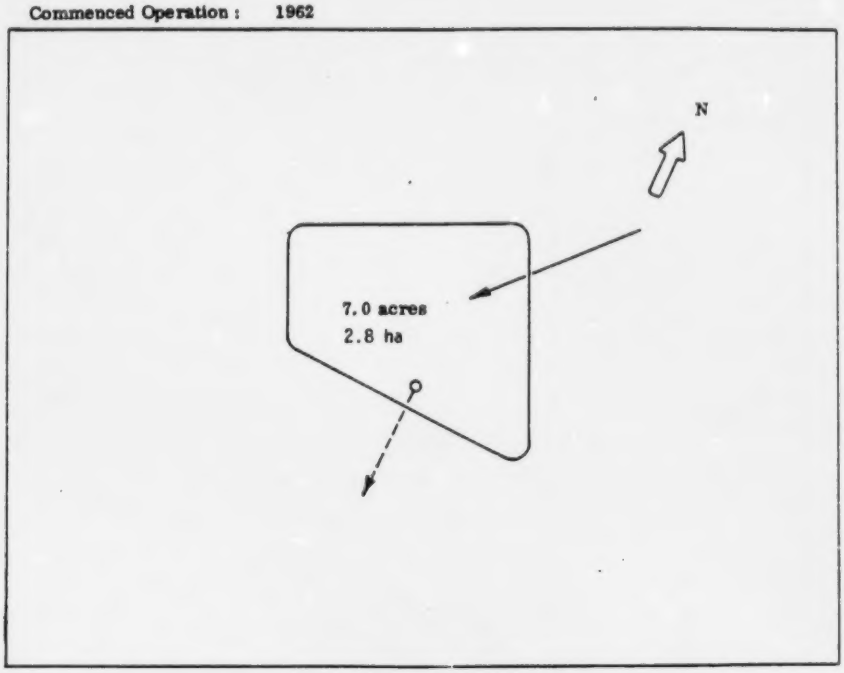
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 240 I gpm 18.1 l/s
Pump 2 : 240 I gpm 18.1 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000613 POWASSAN LAGOON — MUNICIPALITY : POWASSAN (C-D) — REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON PHOSPHORUS REMOVAL (CONTINUOUS DISCHARGE)

CURRENT POPULATION : 1,215
POPULATION SERVED : 1,200
PERCENT SERVED : 98.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.318 1000 M3 — DESIGN BOD5 : 0.0 MG/L — DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	6.887	.220	.392	6.887	175.0	42.0	76	.9	358.0	18.0	94	2.3	13.8	5.8	57	.055
FEB	8.215	.293	.877	8.215	134.0	55.0	58	.6	115.0	19.0	83	.7	6.8	5.2	23	.013
MAR	18.418	.594	2.670	18.418	71.0	41.5	41	.5	85.0	39.5	53	.8	4.0	4.0		
APR	18.995	.633	2.075	18.995	58.0	11.5	80	.8	110.0	18.0	83	1.7	4.8	1.9	60	.055
MAY	10.851	.350	.524	10.852		11.0				25.0				1.7		
JUN	11.215	.373	.550	11.215	205.0	8.0	97	2.2	213.0	8.0	96	2.2	8.2	2.8	65	.061
JUL	11.515	.371	.779	11.515	139.0	15.0	89	1.4	210.0	23.0	89	2.1	7.6	3.2	57	.051
AUG	15.870	.512	1.316	15.870	120.0	25.0	79	1.5	198.0	30.0	84	2.6	9.3	4.3	53	.079
SEP	7.302	.243	1.000	7.302	115.0	8.0	93	.7	155.0	30.0	80	.9	7.5	3.6	52	.028
OCT	14.213	.458	1.473	14.213	105.0	8.0	92	1.3	170.0	8.0	95	2.3	7.5	3.7	50	.054
NOV	16.517	.551	1.200	16.517	130.0	16.0	87	1.8	215.0	20.0	90	3.2	8.5	3.6	57	.081
DEC	16.606	.535	1.793	16.606	88.0	18.0	79	1.1	145.0				7.8	3.6	53	.070
TOTAL	156.604			156.605				13.3				19.2				.547
AVERAGE		.428			121.8	21.4	82		179.4	21.6	87		7.8	3.6	53	
MAXIMUM			2.670	18.995												
NO. OF SAMPLES					22	22			22	20			22	22		

Waste Stabilization Pond

PROJECT : (Warren)
Ratter and Dunnet

Cell Acreage : 10 + 10

Cell area: 4 + 4 ha

Total Acreage : 20 acres

Total hectares: 8

Operation :

- ■ Series
- ■ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

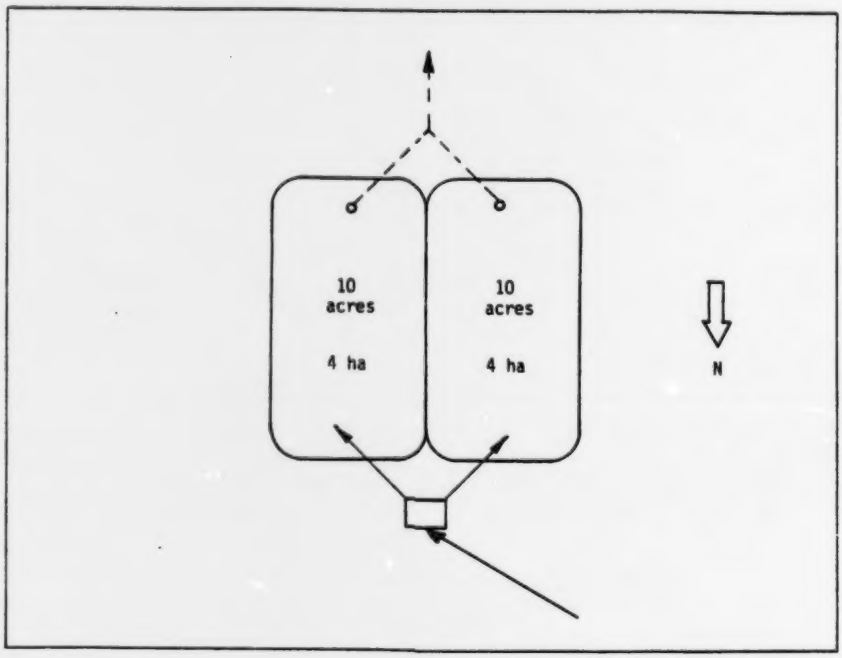
Flow Measurement :

- □ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 450 I gpm 34.1 l/s
Pump 2 : 450 I gpm 34.1 l/s

Total Cap : 450 I gpm 34.1 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001916 WARREN LAGOON

MUNICIPALITY : RATTER DUNNET WARREN
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 1,595
POPULATION SERVED : 610
PERCENT SERVED : 38.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.904 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	6.883	.218	.441		220.0				185.0							
FEB	6.082	.218	.277		470.0				995.0				20.0			
MAR	10.792	.345	.473													
APR	12.578	.405	.842		52.0				75.0				1.8			
MAY	9.429	.304	.410		95.0				115.0				5.7			
JUN	7.974	.266	.355													
JUL	8.913	.287	.540		265.0				570.0				12.0			
AUG	7.214	.230	.377													
SEP	7.082	.236	.305	51.898	250.0	2.0	99		630.0	6.0	99		9.1	.6	92	
OCT	7.114	.220	.295		*	.2			*	5.0			*	.4		
NOV	9.154	.305	.398		98.0				120.0				5.0			
DEC	8.596	.277	.343		130.0				110.0				5.8			
TOTAL	101.811			51.898			19.9				34.8					0.051
AVERAGE		.276			197.2	1.1	99		347.5	5.5	98		8.4	.5	93	
MAXIMUM			.842	51.898												
NO. OF SAMPLES					8	3			8	3			6	3		

Waste Stabilization Pond

PROJECT : SHACKLETON - MACHIN TWP (FAUQUIER)

Cell Acreage : 10.0 Cell area: 4.0 ha

Total Acreage : 10.0 Total hectares: 4.0

Commenced Operation : Nov. 1974

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

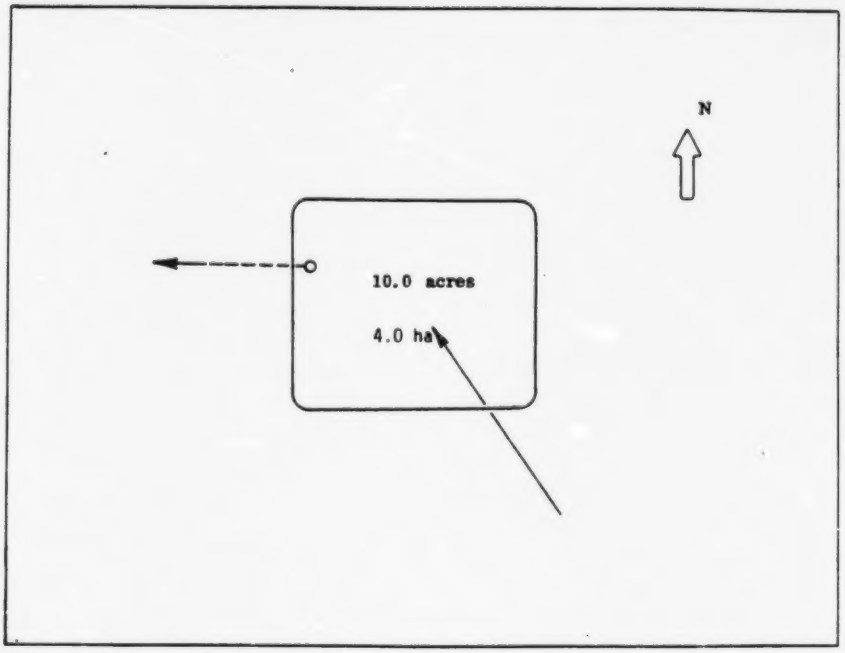
- ☐ Batch
- ☐ Continuous
- ■ None

Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 :	250 I gpm	18.9 l/s
Pump 2 :	250 I gpm	18.9 l/s
Total Cap :	250 I gpm	18.9 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001702 FAUQUIER LAGOON

MUNICIPALITY : SHACKLETON & MACHIN FAUQ
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 914
POPULATION SERVED : 500
PERCENT SERVED : 54.7

* DATA NOT AVAILABLE

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.383 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	6.328	.205	.332		110.0				200.0				7.9			
FEB	6.496	.245	.332													
MAR	18.116	.582	.891		140.0				45.0				1.9			
APR	23.950	.798	1.232	49.420	34.0	5.4	84		55.0	7.5	86		1.2	.7	36	
MAY	15.103	.487	1.005													
JUN	9.840	.328	.446		90.0				161.7				3.7			
JUL	18.790	.606	.673		105.0				225.0				7.0			
AUG	8.946	.289	.446		135.0				190.0				2.6			
SEP	10.623	.354	.448	59.400	*	10.0			*	15.7			*	.6		
OCT	12.280	.396	1.091													
NOV	8.831	.294	.446		40.0				148.3				1.8			
DEC	7.050	.227	.335													
TOTAL	146.353			108.820				12.5				19.6				0.455
AVERAGE		.401			93.4	7.7	91		148.4	12.1	91		3.7	.6	81	
MAXIMUM			1.232	59.400												
NO. OF SAMPLES					10	12			10	12			10	12		

Waste Stabilization Pond

PROJECT : SUNDRIDGE

Cell Acreage : 10.0 + 10.0 Cell area: 4.0 + 4.0 ha

Total Acreage : 20.0 Total hectares: 8.0

Commenced Operation: Jan 1978

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal (¶ 80 day retention)
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001961 SUNRIDGE LAGOON

MUNICIPALITY : SUNDRIDGE AD
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON PHOSPHORUS REMOVAL (ANNUAL DISCHARGE)

CURRENT POPULATION : 702
POPULATION SERVED : 840
PERCENT SERVED : 119.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.854 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	6.796	.218	.273		19.0				20.0				5.4			
FEB	6.651	.236	.341		73.0				108.0				5.3			
MAR	11.086	.359	.527		49.0				145.0				4.6			
APR	13.827	.461	.568		20.0				60.0				4.1			
MAY	12.450	.402	.550	61.825	33.0	3.3	90		51.0	8.5	83		3.6	.6	83	
JUN	10.290	.340	.450		93.0				223.0				9.2			
JUL	10.820	.349	.440		45.0				45.0				2.8			
AUG	5.495	.177	.223		26.0				40.0				2.2			
SEP	4.772	.159	.191													
OCT	5.487	.177	.250		42.0				60.0				3.1			
NOV	6.000	.200	.263		27.0				30.0				7.1			
DEC	13.950	.450	.540													
TOTAL	107.624			61.825				4.3				7.5				0.441
AVERAGE		.294			42.7	3.3	92		78.2	8.5	89		4.7	.6	87	
MAXIMUM			.568	61.825												
NO. OF SAMPLES					12	1			12	1			12	1		

426

Waste Stabilization Pond

PROJECT : WEBBWOOD

Cell Acreage : 10 Acres

Total Acreage : 10 Acres

Cell area: 4.0 ha

Total hectares: 4.0

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

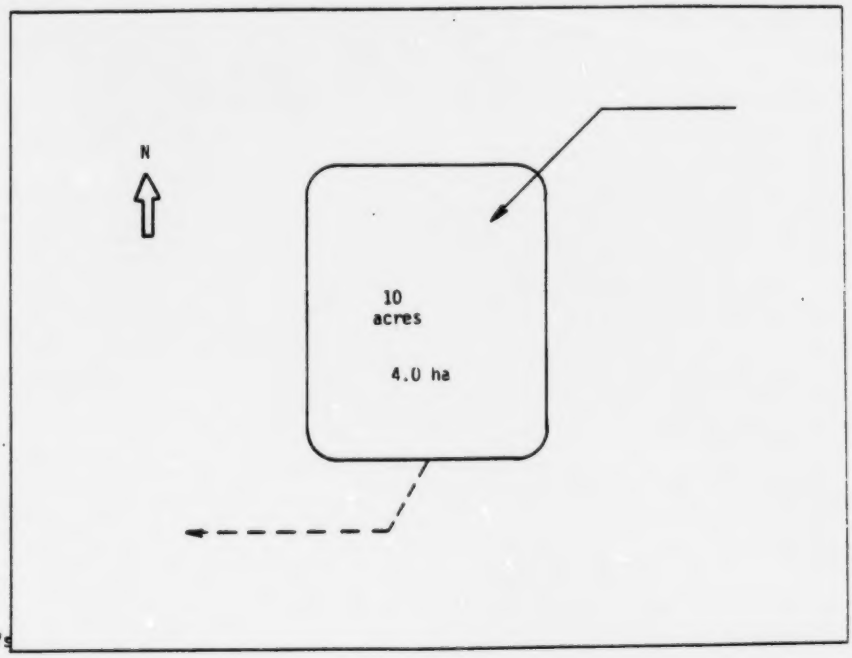
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 200 I gpm 15.1 l/s
Pump 2 : 200 I gpm 15.1 l/s

Total Cap : 200 I gpm 15.1 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001881 WEBBWOOD LAGOON

MUNICIPALITY : WEBBWOOD
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

* DATA NOT AVAILABLE

CURRENT POPULATION : 511
POPULATION SERVED : 460
PERCENT SERVED : 90.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.484 1000 M3 DESIGN BODS : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	1.987	.064	.118		330.0				380.0				18.0			
FEB	1.700	.059	.082		410.0				175.0				16.0			
MAR	3.150	.100	.277		215.0				150.0				8.5			
APR	8.525	.284	.473	8.526	*	26.0			*	45.0			*	2.3		
MAY	5.124	.165			46.0				60.0				5.3			
JUN	2.453	.082	.114		350.0				630.0				20.0			
JUL	.589	.019	.034													
AUG	.838	.017	.040													
SEP	3.155	.072	.109		150.0				75.0				8.4			
OCT	2.136	.089	.118		75.0				70.0				6.7			
NOV	.439	.014	.025		175.0				95.0				9.6			
DEC	.469	.015	.026		75.0				70.0				6.7			
TOTAL	29.385			8.526				5.1				4.1				0.254
AVERAGE		.080			202.8	26.0	87		188.3	45.0	76		11.0	2.3	79	
MAXIMUM			.473	8.526												
NO. OF SAMPLES					9	1			9	1			9	1		

Northwestern Region

6

Ontario

Ministry of the Environment

Ministry of the Environment
Ontario

Northwestern Region

⑥

REGIONAL OFFICE
THUNDER BAY
435 James St. S.
P.O. Box 5000
807-475-1205

DISTRICT OFFICE
Kenora
808 Robertson St.
807-468-5578

Waste Stabilization Pond

PROJECT: RAINY RIVER LAGOON
ATWOOD TWP.

Cell Acreage :

Total Acreage :

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002292 RAINY RIVER LAGOON

MUNICIPALITY : ATWOOD (RAINY RIVER)
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 320
POPULATION SERVED : 1,000
PERCENT SERVED : 312.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.883 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	35.940	1.159	1.522		50.0				35.0				2.2			
FEB	37.463	1.337	1.559	51.000	50.0	17.6	64		170.0	18.6	90		2.5	2.2	10	
MAR	61.916	1.997	3.950		20.0				90.0				2.2			
APR	67.685	2.256	6.273		20.0				90.0				2.2			
MAY	31.312	1.010	1.286		50.0				95.0				2.5			
JUN	24.862	.828	1.363		120.0				95.0				3.6			
JUL	18.211	.587	.914	30.300	40.0	5.7	85		85.0	16.0	81		5.2	.6	88	
AUG	19.766	.637	1.391	48.000	80.0	8.0	90		180.0	50.0	72		7.9	.7	90	
SEP	14.838	.495	.977		36.0				55.0				3.0			
OCT	20.748	.668	3.308		38.0				65.0				2.5			
NOV	28.913	.964	1.914	49.050	50.0	4.8	90		90.0	15.0	83		3.6	.9	75	
DEC	26.662	.859	1.570	54.552	30.0	6.4	78		80.0	13.3	83		5.0	1.5	69	
TOTAL	388.316			232.902				15.5				27.9				0.970
AVERAGE		1.066			48.6	8.5	82		94.1	22.1	76		3.5	1.2	65	
MAXIMUM			6.273	54.552												
NO. OF SAMPLES					12	10			12	9			9	10		

Waste Stabilization Pond

PROJECT : EMO TWP.

Cell Acreage : 10 Cell area: 4.0 ha

Total Acreage : 10 Total hectares: 4.0

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

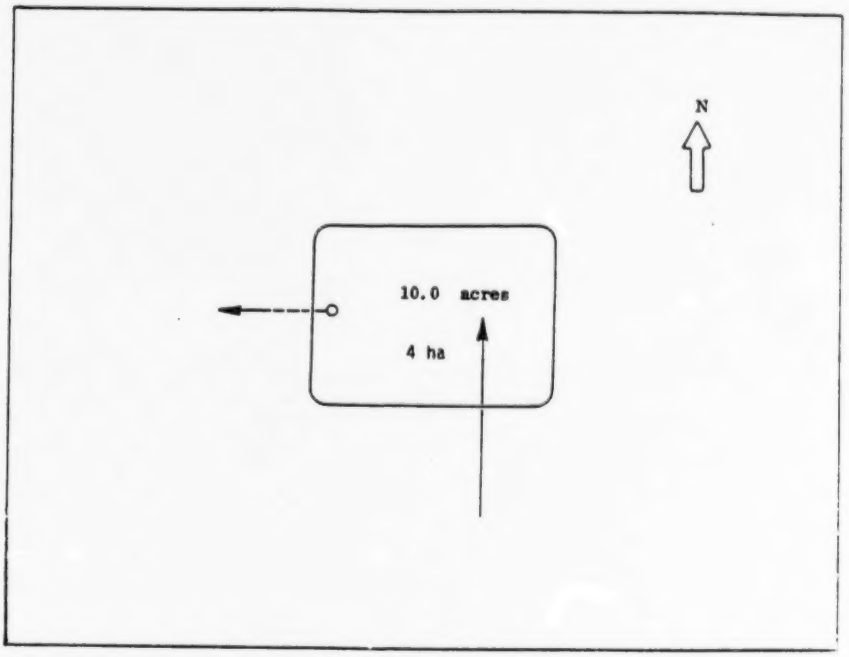
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 250 I gpm 19.9 l/s
Pump 2 : 250 I gpm 19.9 l/s

Total Ca,, : 400 I gpm



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001015 EMO LAGOON (NO DISCHARGE IN 79)

MUNICIPALITY : EMO
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 1,035
POPULATION SERVED : 735
PERCENT SERVED : 71.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG
JAN/79-DEC/79																
JAN	9.905	.319	.383		64.0				1220.0				22.0			
FEB	9.696	.346														
MAR	12.356	.398			120.0				115.0				7.1			
APR	9.935	.331	4.387		120.0				115.0				7.1			
MAY	10.264	.331			120.0				120.0				8.5			
JUN	10.176	.339			160.0				100.0				8.4			
JUL	12.324	.397	.506		150.0				340.0							
AUG	12.320	.395	.518		250.0				410.0				9.9			
SEP	11.078	.369	.550													
OCT	9.296	.299			100.0				220.0				5.8			
NOV	13.069	.435														
DEC	9.492	.306			190.0				410.0				16.0			
TOTAL	129.911															
AVERAGE		.355			141.5				338.8				10.6			
MAXIMUM			4.387													
NO. OF SAMPLES					9				9				8			

AERATED CELLS PLUS LAGOONS

Ministry of the Environment
Ontario

Southwestern Region

①

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

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250 Windsor Ave
519-254-5129

Sarnia
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519-336-4030

Owen Sound
1180 20th St. E.
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SUB-OFFICE

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435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Southwestern Region

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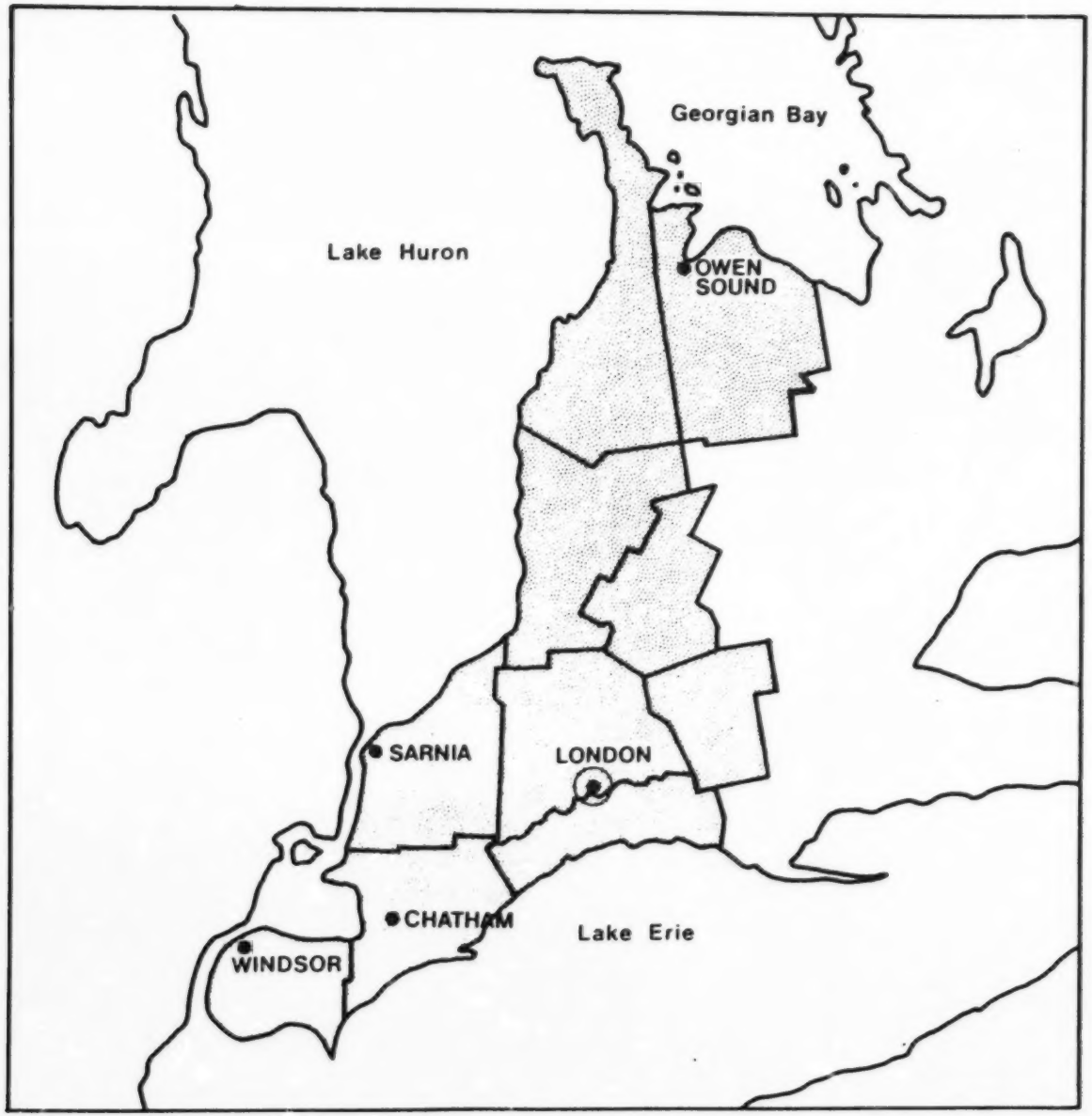
Ministry of the Environment

Ontario



Waste Stabilization Pond

PROJECT : DURHAM

Cell Acreage : 0.7 | Cell area: 0.3 ha

Total Acreage : 0.7 | Total hectares: 0.3

Commenced Operation: 1966

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : Single aerated cell

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

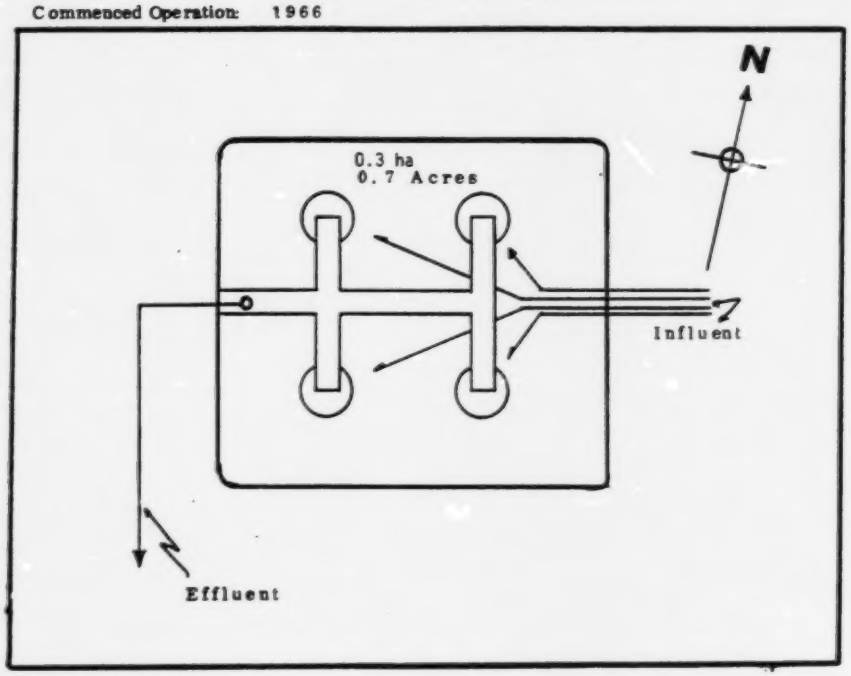
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 700 Igpm 50.3 l/s
Pump 2 : 700 Igpm 50.3 l/s

Total Cap .



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000999 DURHAM LAGOON

MUNICIPALITY : DURHAM
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON
CONTINOUS DISCHARGE

CURRENT POPULATION : 2,487
POPULATION SERVED : 1,985
PERCENT SERVED : 80.4

* DATA NOT AVAILABLE

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.318 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	26.739	.863	1.900		117.0	33.0	71	2.2	118.0	82.0	29	.9	7.9	6.7	15	.032
FEB	24.048	.859			138.0	48.0	65	2.1	195.0	73.0	62	2.9	5.5	5.7	-	-
MAR	49.792	1.606	2.373		*	*			86.0	64.0	25	1.0	3.5	4.0	-	-
APR	*	*			*	*			*	*			*	*		
MAY	*	*			*	*			*	*			*	*		
JUN	*	*			*	*			*	*			*	*		
JUL	*	*			*	*			*	*			*	*		
AUG	*	*			*	*			*	*			*	*		
SEP	*	*			*	*			*	*			*	*		
OCT	*	*			*	*			*	*			*	*		
NOV	*	*			*	*			*	*			*	*		
DEC	33.510	1.080	1.520		135.0	*			211.0	*			3.9	*		
TOTAL	134.089							4.4				4.5				.032
AVERAGE		1.102			130.0	40.5	68		152.0	73.0	51		5.2	5.4	-	
MAXIMUM			2.373													
NO. OF SAMPLES					6	3			7	4			7	6		

Waste Stabilization Pond

PROJECT : KINCARDINE

Cell Acreage : 16.0 + 16.0 Cell area: 6.5 + 6.5 ha

Total Acreage : 32.0 Total hectares: 13.0

Commenced Operation: JAN, 1965 Aerated Cell added in 1978

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- ■ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

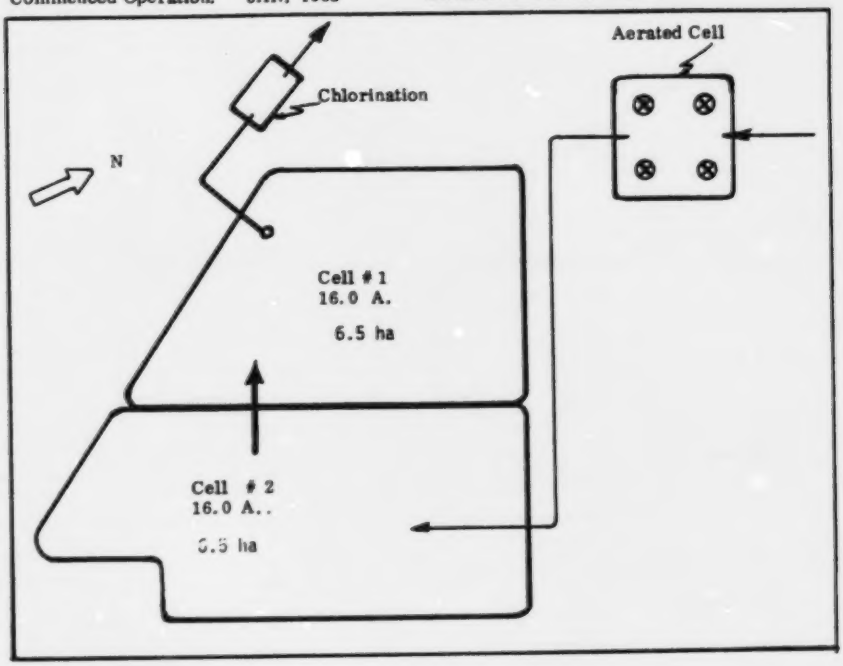
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000864 KINCARDINE LAGOON

MUNICIPALITY : KINCARDINE
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON (CONTINUOUS DISCHARGE)

CURRENT POPULATION : 5,343
POPULATION SERVED : 4,989
PERCENT SERVED : 93.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.908 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	58.075	1.873	3.937		131.5	14.0	89	6.8	72.0	7.0	90	3.7	7.3	5.7	21	.093
FEB	47.824	1.708	3.550		152.0	24.8	83	6.0	153.0	14.5	90	6.6	8.0	6.3	20	.079
MAR	89.129	2.875	6.960		96.0	14.2	85	7.2	83.0	5.4	93	6.9	5.5	4.6	15	.077
APR	85.500	2.850	5.910		75.0	10.9	85	5.4	70.5	17.3	75	4.5	4.9	3.0	38	.160
MAY	71.290	2.300	2.770	44.510	112.0	3.6	96	7.7	77.0	6.8	91	5.0	7.2	2.4	65	.339
JUN	68.530	2.280	5.010	31.980	99.0	14.8	85	5.7	75.0	14.0	81	4.1	4.8	2.4	48	.161
JUL	113.310	3.660	4.380	33.900	77.0	9.3	87	7.6	52.0	16.8	67	3.9	4.7	1.0	77	.410
AUG	112.120	3.620	5.340	34.740	133.5	10.0	92	13.8	121.5	13.5	88	12.1	6.2	1.7	71	.498
SEP	100.250	3.340	4.500	22.860	139.5	9.4	93	13.0	97.5	6.0	93	9.1	6.9	3.0	56	.389
OCT	84.420	2.720	3.080	43.700	71.0	9.8	86	5.1	58.0	13.8	76	3.7	5.9	3.3	42	.213
NOV	86.180	2.870	3.850	50.610	135.0	5.0	96	11.1	88.0	1.5	98	7.4	7.9	3.4	56	.388
DEC	94.430	3.050	4.770	68.170	62.0	4.4	92	5.4	48.0	2.0	95	4.3	3.3	3.2	1	.006
TOTAL	1011.058			330.450				95.4				71.8				2.812
AVERAGE		2.762			106.9	10.9	89		82.9	9.8	88		6.0	3.3	44	
MAXIMUM			6.960	68.170												
NO. OF SAMPLES					20	23			20	23			20	24		

Waste Stabilization Pond

PROJECT : LISTOWEL

Cell Acreage : 1.5 + 42.4 + 26.6 Cell area: 0.6 + 17.2 + 10.8 ha

Total Acreage : 70.5

Commenced Operation : (Facultative Cells) : Sept. 1961
Expansion : (Aerated Cell) : Sept. 1971

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- □ Continuous
- □ Annual
- ■ Other : Dec-Apr : Continuous
  July-Oct : Spray Irr.

Phosphorus Removal:

- □ Batch
- ■ Continuous
- □ None

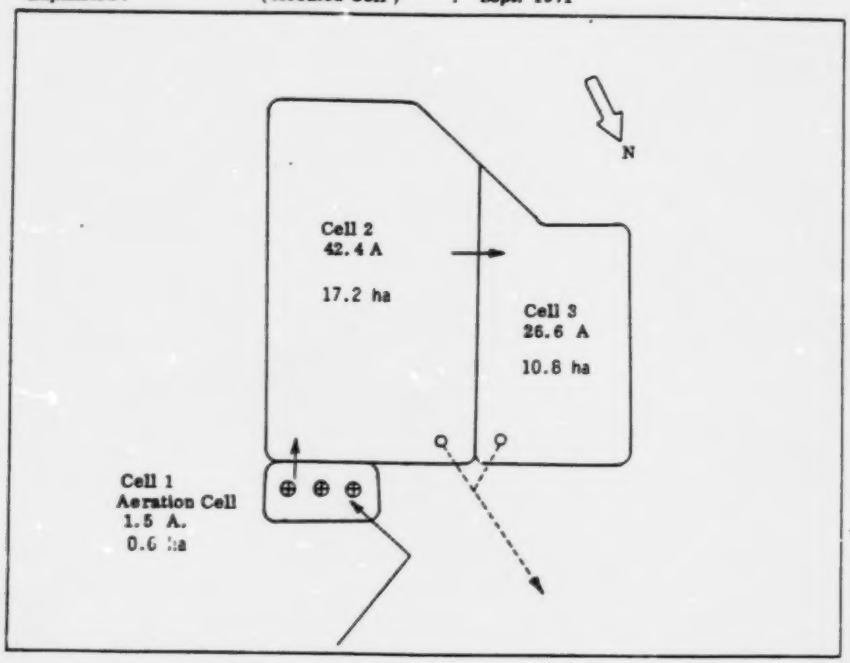
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 972 Us gpm 61.3 l/s
Pump 2 : 972 Us gpm 61.3 l/s

Total Cap : 1750 Us gpm
110.4 l/s



Signifigant Industries : Campbell Soups Ltd

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000409 LISTOWEL LAGOON

MUNICIPALITY : LISTOWEL
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON
LAGOON AND SPRAY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 4,972
POPULATION SERVED : 4,918
PERCENT SERVED : 98.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.546 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

<--- FLOW DATA ---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	165.838	5.350	8.183		267.0				162.0				6.4			
FEB	138.606	4.593	5.864		232.5				192.5				5.4			
MAR	253.305	8.139	12.865		240.0	30.0	87		187.3	18.0	91			.8		
APR	207.288	6.909	10.546	203.108	137.5	20.2	85		87.0	17.0	80		3.0	.8	73	
MAY	188.532	5.436	7.800		314.0				182.0				4.0			
JUN	129.484	4.316	6.318		277.5				156.5				6.7			
JUL	108.831	3.509	5.727		512.5				388.5				7.6			
AUG	92.574	2.986	4.864		158.0				148.0				5.7			
SEP	110.513	3.683	6.318		212.5				156.5				6.1			
OCT	135.652	4.375	5.546	78.117	131.5	8.6	93		65.5	10.2	84		3.6	.9	73	
NOV	174.293	5.809	9.228	197.286	183.3	18.8	89		94.6	26.2	72		3.7	.9	73	
DEC	195.932	6.320	9.546	167.220	128.0	8.7	93		96.5	10.3	81		4.1	.8	80	
TOTAL	1869.848			645.731				403.1				256.3				8.040
AVERAGE		5.119			232.8	17.2	92		152.9	15.9	89		5.1	.9	82	
MAXIMUM			12.865	203.108												
NO. OF SAMPLES					25	38			26	40			23	40		

Waste Stabilization Pond

PROJECT : THORNBURY

Cell Acreage : 4.38 + 9.67 + 10.19 — Cell area: 1.8 + 3.9 + 4.1 ha

Total Acreage : 24.24 — Total hectares: 9.8

Commenced Operation: August 1975

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : series-parallel

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other : semi-annual

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

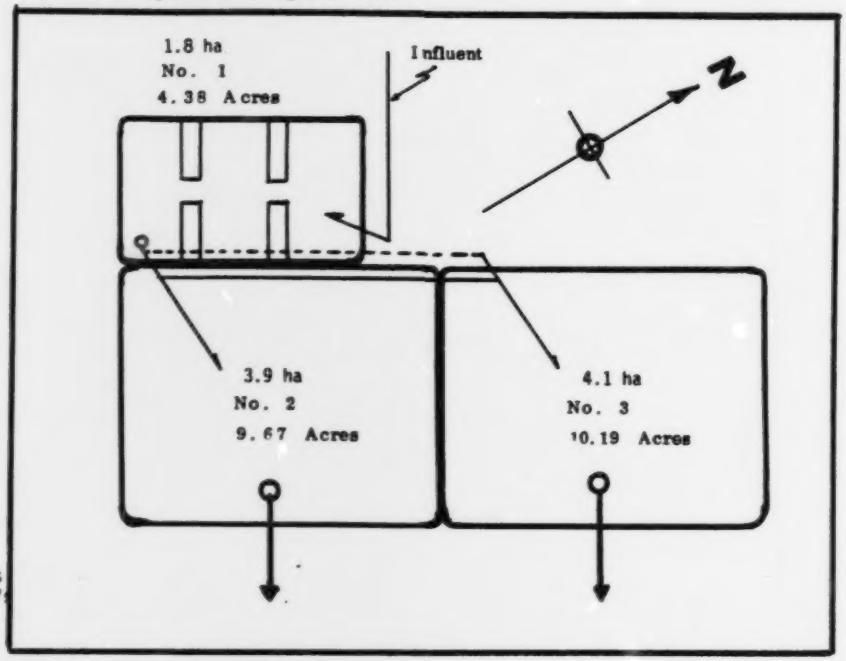
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 920 Igpm 69.6 l/s
Pump 2 : 920 Igpm 69.5 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001890 THORNBURY LAGOON

MUNICIPALITY : THORNBURY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON

CURRENT POPULATION : 1,386
POPULATION SERVED : 1,335
PERCENT SERVED : 96.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.272 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/78-DEC/78																
JAN	28.549	.921	1.587		8.6				73.0				1.6			
FEB	24.262	.867	1.405		23.0				35.0				1.0			
MAR	52.670	1.699	4.173		26.0	50.3	-		32.0	37.5	-		1.5	1.7	-	
APR	47.885	1.596	4.087		556.0				103.0				1.6			
MAY	26.040	.840	1.084		24.0				20.0				2.0			
JUN	23.715	.790	1.170		32.0				47.0				1.5			
JUL	22.202	.716	.982		15.0				37.5				1.2			
AUG	23.143	.746	1.288		6.8				12.0				1.1			
SEP	22.994	.766	1.003		11.5				7.5				.9			
OCT	44.306	1.429	1.815		386.0	6.6	98		265.0	10.2	96		1.6	1.5	5	
NOV	37.651	1.255	1.828		487.0	5.0	98		248.0	7.7	96		1.1	1.8	-	-
DEC	39.186	1.263	2.604		17.0	10.6	37		36.2	10.7	70		.8	1.8	-	-
TOTAL	392.583							44.3				23.4				0.157
AVERAGE		1.074			131.0	18.1	86		76.3	16.5	78		1.3	1.7	-	
MAXIMUM			4.173													
NO. OF SAMPLES					23	11			24	13			24	13		

Ministry of the Environment
Ontario

West Central Region

②

REGIONAL OFFICE

STONEY CREEK
140 Centennial Pkwy. N.
416-561-7410

DISTRICT OFFICES

Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

West Central Region ②

Ministry of the Environment

Ontario

Waste Stabilization Pond

PROJECT : WATERFORD

Cell Acreage : 2.2 (Aeration) + 16.5 Cell area: 0.9 + 6.7 ha

Total Acreage : 18.7 Total hectares: 7.6

Commenced Operation (Facultative Cell) : Aug 1962
Expansion (Aeration Cell) : Jan 1975

Operation :

- ☐ Series
- ☐ Parallel (Aerated Lagoon)
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ■ Continuous
- ☐ None

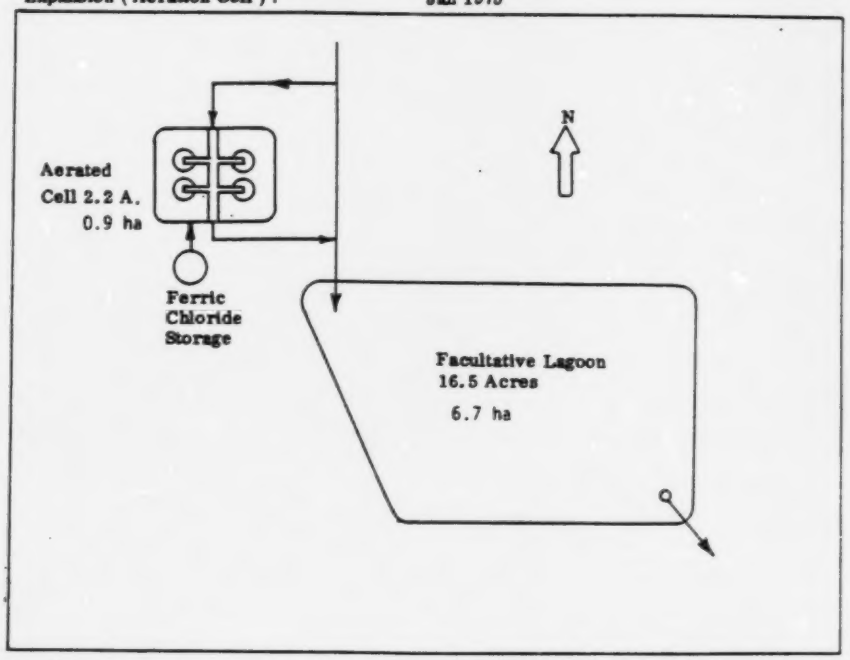
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 1500 US gpm 94.7 l/s
Pump 2 : 1500 US gpm 94.7 l/s

Total Cost : N A



Significant Industries : Canadian Canners, Toronto Mill, Stock Woolen Mill.

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001195 NANTICOKE (WATERFORD)

MUNICIPALITY : NANTICOKE (WATERFORD)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : AERATED CELL PLUS LAGOON
PHOSPHORUS REMOVAL
PHOSPHORUS REMOVAL

CURRENT POPULATION : 18,829
POPULATION SERVED : 2,200
PERCENT SERVED : 11.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.126 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	BOD INFLUENT MG/L	BOD EFFLUENT MG/L	BOD REDUCTION %	BOD REDUCTION 1000 KG	SUSP.SOLIDS INFLUENT MG/L	SUSP.SOLIDS EFFLUENT MG/L	SUSP.SOLIDS REDUCTION %	SUSP.SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS REDUCTION %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	45.364	1.462	2.200	45.364	36.0	26.0	27		25.0	18.0	28		1.7	1.5	8	
FEB	45.660	1.629	2.960	45.660	115.0	15.0	86		131.0	26.0	80		4.5	2.2	51	
MAR	39.264	1.267	2.068	39.264	68.0	23.0	66		42.0	43.0	-		1.7	2.5	-	
APR	38.306	1.279	1.724	38.310	280.0	11.2	95		201.0	22.0	89		5.5	3.4	38	
MAY	38.416	1.239	1.897	38.416	70.0	21.6	69		8.0	32.0	-		1.3	1.3	-	
JUN	35.099	1.169	1.965	35.100	1287.5	8.8	99		223.0	11.7	94		6.5	3.0	53	
JUL	32.864	1.060	1.433	32.864	30.0	18.0	40		38.0	45.0	-		3.0	1.8	38	
AUG	33.670	1.087	1.820	33.670	100.0	21.6	78		114.0	91.0	20		6.2	3.3	45	
SEP	34.821	1.161	2.220	34.821	256.0	21.4	91		170.5	54.5	68		6.5	3.5	46	
OCT	44.599	1.439	2.088	44.599	57.3	22.6	60		83.0	37.6	54		3.8	2.8	25	
NOV	39.307	1.310	1.620	39.307	57.0	34.2	57		52.3	58.8	-		1.6	3.0	-	
DEC	36.264	1.170	1.506	36.264	42.0	17.2	59		39.0	38.5	1		3.8	1.7	55	
TOTAL	483.634			483.639				82.9				25.0				0.603
AVERAGE		1.273			198.2	19.2	90		93.9	39.8	57		3.8	2.5	34	
MAXIMUM			2.960	45.660												
NO. OF SAMPLES					17	17			22	22			19	22		

Southeastern Region

4

Ministry of the Environment

Ontario

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Waste Stabilization Pond

PROJECT : ALEXANDRIA

Cell Acreage : 13.6 + 12.8 + 16.0

Total Acreage : 42.4

Cell area: 5.5 + 5.2 + 6.5

Total hectares: 17.2

Commenced Operation : N/A

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

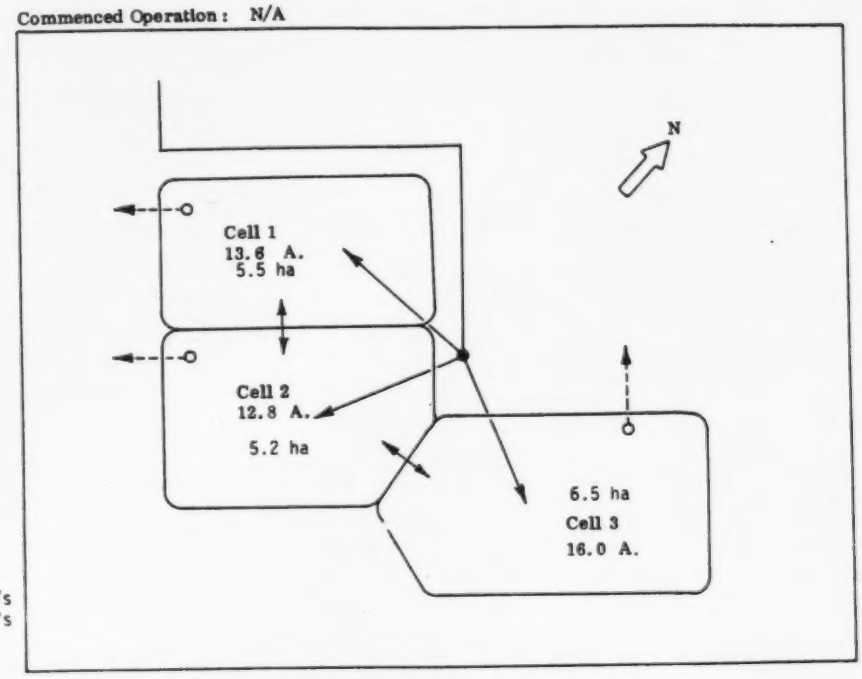
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 800 I gpm 60.6 l/s
Pump 2 : 850 I gpm 64.3 l/s

Total Cap : 1590 I gpm
120.4 l/s



Significant Industries : Consolidated Textiles

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000846 ALEXANDRIA LAGOON

MUNICIPALITY : ALEXANDRIA
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON
CONTINUOUS DISCHARGE

CURRENT POPULATION : 3,437
POPULATION SERVED : 3,600
PERCENT SERVED : 104.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.455 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	139.449	4.498	5.319	139.400	205.0	80.0	60		200.0	32.0	84		17.7	18.0	-	
FEB	116.005	4.143	5.187	116.000	563.0	59.0	89		2178.0	44.0	97		20.0	20.5	-	
MAR	318.275	10.267	16.692	318.300	161.0	30.0	81		137.0	68.0	50		12.5	13.0	-	
APR	267.400	8.900	13.300	267.400	46.0	15.0	67		130.0	30.0	76		9.1	7.4	18	
MAY	167.800	5.400	8.700	167.800	225.0	28.0	88		125.0	51.0	59		12.2	11.9	2	
JUN	139.800	4.700	5.600	139.800	270.0	12.5	95		1072.0	34.0	96		9.4	9.0	4	
JUL	126.200	4.200	5.700	126.200	191.0	18.0	90		288.0	60.0	79		9.8	8.8	10	
AUG	160.000	5.200	8.900	160.000	66.0	7.0	89		165.0	15.0	90		16.0	9.3	41	
SEP	207.000	6.900	14.100	207.000	132.0	8.5	93		85.0	13.0	84		18.9	6.4	61	
OCT	175.700	5.700		175.700	149.0	14.0	90		250.0	20.0	92		19.5	9.0	53	
NOV	151.970	5.060	9.600	152.000	218.3	9.5	95		185.0	18.5	90		16.8	7.9	52	
DEC	189.400	6.110	9.200	189.400	84.0	20.0	76		72.5	28.0	61		12.5	11.0	12	
TOTAL	2158.999			2159.000				761.8				800.9				6,692
AVERAGE		5.923			192.5	24.9	87		405.6	34.2	91		14.3	11.0	23	
MAXIMUM			16.692	318.300												
NO. OF SAMPLES					30	19			30	18			30	19		

Waste Stabilization Pond

PROJECT : ALMONTE

Cell Acreage : 23.4 + 7.3 + 9.0 + 6.0 + Aeration Cell Cell area: 9.5 + 3.0 + 3.6 + 2.4 ha

Total Acreage : 45.7 + Aeration Cell Total hectares: 18.5

Commenced Operation : Sept. 1962 - Aeration Added Sept. 1975

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

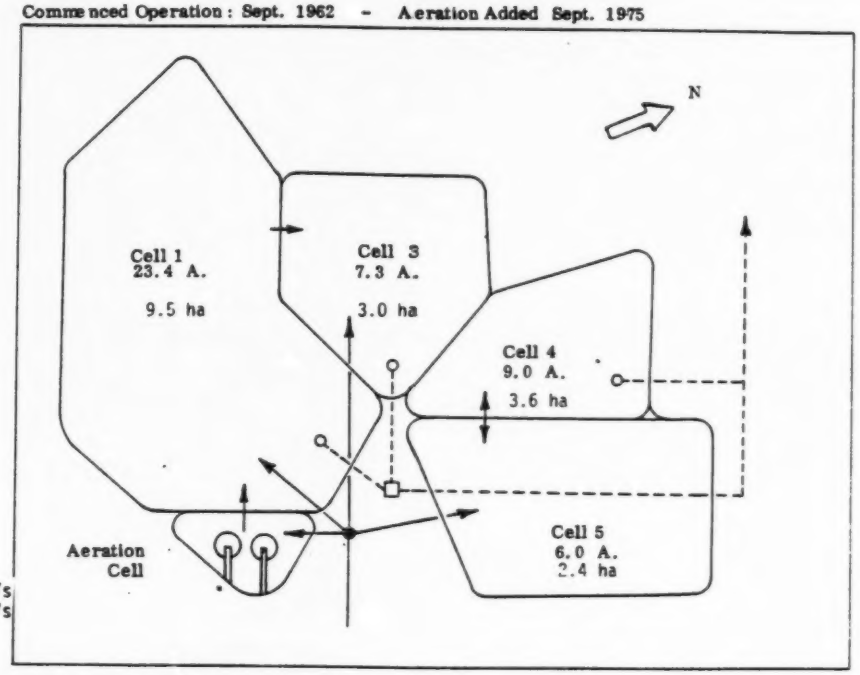
Flow Measurement :

- □ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 650 I gpm 49.2 l/s
Pump 2 : 650 I gpm 49.2 l/s

Total Cap : 1000 I gpm 75.7 l/s



Signifigant Industries : Woolen Mills

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000873 ALMONTE LAGOON

MUNICIPALITY : ALMONTE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON
SEASONAL DISCHARGE

CURRENT POPULATION : 3,839
POPULATION SERVED : 3,750
PERCENT SERVED : 97.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.455 1000 M3 DESIGN BODS : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->				><-BIOCHEMICAL OXYGEN DEMAND-><				><--- SUSPENDED SOLIDS ---><				><--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/79-DEC/79																
JAN	64.099	2.068	3.182		82.0				67.0				4.3			
FEB	58.200	2.100	2.300		55.0				80.0				7.1			
MAR	125.420	4.050	5.910		33.5				60.0				1.2			
APR	133.400	4.300	5.600	86.900	27.0	6.0	77		51.5	22.0	57		3.2	1.4	54	
MAY	82.700	2.700	3.700	195.600	95.0	10.8	88		55.0	11.3	79		3.9	1.1	70	
JUN	64.000	2.130	2.600		67.5				84.0				5.0			
JUL	40.200	1.200	2.100		113.0				137.5				8.0			
AUG	43.100	1.390	3.200		124.0				130.0				5.6			
SEP	38.500	1.280	1.700		85.0				82.5				6.9			
OCT	73.130	2.360	3.400		71.0				57.5				4.5			
NOV	71.300	2.380	3.400	282.500	60.0	6.1	89		70.0	5.2	92		3.0	3.1	-	
DEC	79.200	2.550	5.000		46.0				70.0				2.9			
TOTAL	873.249			565.000				55.8				57.5				2.445
AVERAGE		2.376			71.5	7.6	89		78.7	12.8	83		4.6	1.8	59	
MAXIMUM			5.910	282.500												
NO. OF SAMPLES					22	11			22	11			23	11		